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(54) Title: NOVEL NUCLEIC ACIDS AND POLYPEPTIDES

(57) Abstract: The present invention provides novel nucleic acids, novel polypeptide sequences encoded by these nucleic acids and
uses thereof.

NOVEL NUCLEIC ACIDS AND POLYPEPTIDES

1. TECHNICAL FIELD

The present invention provides novel polynucleotides and proteins encoded by
5   such polynucleotides, along with uses for these polynucleotides and proteins, for example
in therapeutic, diagnostic and research methods.

2. BACKGROUND

Technology aimed at the discovery of protein factors (including e.g., cytokines,
10   such as lymphokines, interferons, CSFs, chemokines, and interleukins) has matured
rapidly over the past decade. The now routine hybridization cloning and expression
cloning techniques clone novel polynucleotides "directly" in the sense that they rely on
information directly related to the discovered protein (i.e., partial DNA/amino acid
sequence of the protein in the case of hybridization cloning; activity of the protein in the
15   case of expression cloning). More recent "indirect" cloning techniques such as signal
sequence cloning, which isolates DNA sequences based on the presence of a now
well-recognized secretory leader sequence motif, as well as various PCR-based or low
stringency hybridization-based cloning techniques, have advanced the state of the art by
making available large numbers of DNA/amino acid sequences for proteins that are
20   known to have biological activity, for example, by virtue of their secreted nature in the
case of leader sequence cloning, by virtue of their cell or tissue source in the case of
PCR-based techniques, or by virtue of structural similarity to other genes of known
biological activity.

Identified polynucleotide and polypeptide sequences have numerous applications
25   in, for example, diagnostics, forensics, gene mapping; identification of mutations
responsible for genetic disorders or other traits, to assess biodiversity, and to produce
many other types of data and products dependent on DNA and amino acid sequences.

3. SUMMARY OF THE INVENTION

30   The compositions of the present invention include novel isolated polypeptides, novel
isolated polynucleotides encoding such polypeptides, including recombinant DNA

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molecules, cloned genes or degenerate variants thereof, especially naturally occurring variants such as allelic variants, antisense polynucleotide molecules, and antibodies that specifically recognize one or more epitopes present on such polypeptides, as well as hybridomas producing such antibodies.

5   The compositions of the present invention additionally include vectors, including expression vectors, containing the polynucleotides of the invention, cells genetically engineered to contain such polynucleotides and cells genetically engineered to express such polynucleotides.

          The present invention relates to a collection or library of at least one novel nucleic
10   acid sequence assembled from expressed sequence tags (ESTs) isolated mainly by sequencing by hybridization (SBH), and in some cases, sequences obtained from one or more public databases. The invention relates also to the proteins encoded by such polynucleotides, along with therapeutic, diagnostic and research utilities for these polynucleotides and proteins. These nucleic acid sequences are designated as SEQ ID NO:
15   1-739. The polypeptides sequences are designated SEQ ID NO: 740-1478. The nucleic acids and polypeptides are provided in the Sequence Listing. In the nucleic acids provided in the Sequence Listing, A is adenosine; C is cytosine; G is guanine; T is thymine; and N is any of the four bases. In the amino acids provided in the Sequence Listing, * corresponds to the stop codon.

20   The nucleic acid sequences of the present invention also include, nucleic acid sequences that hybridize to the complement of SEQ ID NO:1-739 under stringent hybridization conditions; nucleic acid sequences which are allelic variants or species homologues of any of the nucleic acid sequences recited above, or nucleic acid sequences that encode a peptide comprising a specific domain or truncation of the peptides encoded by
25   SEQ ID NO:1-739. A polynucleotide comprising a nucleotide sequence having at least 90% identity to an identifying sequence of SEQ ID NO:1-739 or a degenerate variant or fragment thereof. The identifying sequence can be 100 base pairs in length.

          The nucleic acid sequences of the present invention also include the sequence information from the nucleic acid sequences of SEQ ID NO:1-739. The sequence
30   information can be a segment of any one of SEQ ID NO:1-739 that uniquely identifies or represents the sequence information of SEQ ID NO:1-739.

A collection as used in this application can be a collection of only one polynucleotide. The collection of sequence information or identifying information of each sequence can be provided on a nucleic acid array. In one embodiment, segments of sequence information is provided on a nucleic acid array to detect the polynucleotide that

5   contains the segment. The array can be designed to detect full-match or mismatch to the polynucleotide that contains the segment. The collection can also be provided in a computer-readable format.

This invention also includes the reverse or direct complement of any of the nucleic acid sequences recited above; cloning or expression vectors containing the nucleic acid

10   sequences; and host cells or organisms transformed with these expression vectors. Nucleic acid sequences (or their reverse or direct complements) according to the invention have numerous applications in a variety of techniques known to those skilled in the art of molecular biology, such as use as hybridization probes, use as primers for PCR, use in an array, use in computer-readable media, use in sequencing full-length genes, use for

15   chromosome and gene mapping, use in the recombinant production of protein, and use in the generation of anti-sense DNA or RNA, their chemical analogs and the like.

In a preferred embodiment, the nucleic acid sequences of SEQ ID NO:1-739 or novel segments or parts of the nucleic acids of the invention are used as primers in expression assays that are well known in the art. In a particularly preferred embodiment, the

20   nucleic acid sequences of SEQ ID NO:1-739 or novel segments or parts of the nucleic acids provided herein are used in diagnostics for identifying expressed genes or, as well known in the art and exemplified by Vollrath et al., Science 258:52-59 (1992), as expressed sequence tags for physical mapping of the human genome.

The isolated polynucleotides of the invention include, but are not limited to, a

25   polynucleotide comprising any one of the nucleotide sequences set forth in SEQ ID NO:1-739; a polynucleotide comprising any of the full length protein coding sequences of SEQ ID NO:1 - 739; and a polynucleotide comprising any of the nucleotide sequences of the mature protein coding sequences of SEQ ID NO: 1- 739. The polynucleotides of the present invention also include, but are not limited to, a polynucleotide that hybridizes under

30   stringent hybridization conditions to (a) the complement of any one of the nucleotide sequences set forth in SEQ ID NO:1-739; (b) a nucleotide sequence encoding any one of the

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amino acid sequences set forth in the Sequence Listing; (c) a polynucleotide which is an allelic variant of any polynucleotides recited above; (d) a polynucleotide which encodes a species homolog (e.g. orthologs) of any of the proteins recited above; or (e) a polynucleotide that encodes a polypeptide comprising a specific domain or truncation of any

5   of the polypeptides comprising an amino acid sequence set forth in the Sequence Listing.

The isolated polypeptides of the invention include, but are not limited to, a polypeptide comprising any of the amino acid sequences set forth in the Sequence Listing; or the corresponding full length or mature protein. Polypeptides of the invention also include polypeptides with biological activity that are encoded by (a) any of the polynucleotides

10   having a nucleotide sequence set forth in SEQ ID NO:1-739; or (b) polynucleotides that hybridize to the complement of the polynucleotides of (a) under stringent hybridization conditions. Biologically or immunologically active variants of any of the polypeptide sequences in the Sequence Listing, and "substantial equivalents" thereof (e.g., with at least about 65%, 70%, 75%, 80%, 85%, 90%, 95%, 98% or 99% amino acid sequence identity)

15   that preferably retain biological activity are also contemplated. The polypeptides of the invention may be wholly or partially chemically synthesized but are preferably produced by recombinant means using the genetically engineered cells (e.g. host cells) of the invention.

The invention also provides compositions comprising a polypeptide of the invention. Polypeptide compositions of the invention may further comprise an acceptable

20   carrier, such as a hydrophilic, e.g., pharmaceutically acceptable, carrier.

The invention also provides host cells transformed or transfected with a polynucleotide of the invention.

The invention also relates to methods for producing a polypeptide of the invention comprising growing a culture of the host cells of the invention in a suitable culture

25   medium under conditions permitting expression of the desired polypeptide, and purifying the polypeptide from the culture or from the host cells. Preferred embodiments include those in which the protein produced by such process is a mature form of the protein.

Polynucleotides according to the invention have numerous applications in a variety of techniques known to those skilled in the art of molecular biology. These

30   techniques include use as hybridization probes, use as oligomers, or primers, for PCR, use for chromosome and gene mapping, use in the recombinant production of protein,

and use in generation of anti-sense DNA or RNA, their chemical analogs and the like. For example, when the expression of an mRNA is largely restricted to a particular cell or tissue type, polynucleotides of the invention can be used as hybridization probes to detect the presence of the particular cell or tissue mRNA in a sample using, *e.g.*, *in situ*

5   hybridization.

In other exemplary embodiments, the polynucleotides are used in diagnostics as expressed sequence tags for identifying expressed genes or, as well known in the art and exemplified by Vollrath et al., Science 258:52-59 (1992), as expressed sequence tags for physical mapping of the human genome.

10   The polypeptides according to the invention can be used in a variety of conventional procedures and methods that are currently applied to other proteins. For example, a polypeptide of the invention can be used to generate an antibody that specifically binds the polypeptide. Such antibodies, particularly monoclonal antibodies, are useful for detecting or quantitating the polypeptide in tissue. The polypeptides of the

15   invention can also be used as molecular weight markers, and as a food supplement.

Methods are also provided for preventing, treating, or ameliorating a medical condition which comprises the step of administering to a mammalian subject a therapeutically effective amount of a composition comprising a polypeptide of the present invention and a pharmaceutically acceptable carrier.

20   In particular, the polypeptides and polynucleotides of the invention can be utilized, for example, in methods for the prevention and/or treatment of disorders involving aberrant protein expression or biological activity.

The present invention further relates to methods for detecting the presence of the polynucleotides or polypeptides of the invention in a sample. Such methods can, for

25   example, be utilized as part of prognostic and diagnostic evaluation of disorders as recited herein and for the identification of subjects exhibiting a predisposition to such conditions. The invention provides a method for detecting the polynucleotides of the invention in a sample, comprising contacting the sample with a compound that binds to and forms a complex with the polynucleotide of interest for a period sufficient to form

30   the complex and under conditions sufficient to form a complex and detecting the complex such that if a complex is detected, the polynucleotide of interest is detected. The

invention also provides a method for detecting the polypeptides of the invention in a sample comprising contacting the sample with a compound that binds to and forms a complex with the polypeptide under conditions and for a period sufficient to form the complex and detecting the formation of the complex such that if a complex is formed, the

5   polypeptide is detected.

The invention also provides kits comprising polynucleotide probes and/or monoclonal antibodies, and optionally quantitative standards, for carrying out methods of the invention. Furthermore, the invention provides methods for evaluating the efficacy of drugs, and monitoring the progress of patients, involved in clinical trials for the treatment

10   of disorders as recited above.

The invention also provides methods for the identification of compounds that modulate (i.e., increase or decrease) the expression or activity of the polynucleotides and/or polypeptides of the invention. Such methods can be utilized, for example, for the identification of compounds that can ameliorate symptoms of disorders as recited herein.

15   Such methods can include, but are not limited to, assays for identifying compounds and other substances that interact with (e.g., bind to) the polypeptides of the invention. The invention provides a method for identifying a compound that binds to the polypeptides of the invention comprising contacting the compound with a polypeptide of the invention in a cell for a time sufficient to form a polypeptide/compound complex, wherein the

20   complex drives expression of a reporter gene sequence in the cell; and detecting the complex by detecting the reporter gene sequence expression such that if expression of the reporter gene is detected the compound the binds to a polypeptide of the invention is identified.

The methods of the invention also provides methods for treatment which involve

25   the administration of the polynucleotides or polypeptides of the invention to individuals exhibiting symptoms or tendencies. In addition, the invention encompasses methods for treating diseases or disorders as recited herein comprising administering compounds and other substances that modulate the overall activity of the target gene products. Compounds and other substances can effect such modulation either on the level of target

30   gene/protein expression or target protein activity.

The polypeptides of the present invention and the polynucleotides encoding them are also useful for the same functions known to one of skill in the art as the polypeptides and polynucleotides to which they have homology (set forth in Table 2). If no homology is set forth for a sequence, then the polypeptides and polynucleotides of the present

5   invention are useful for a variety of applications, as described herein, including use in arrays for detection.

4. DETAILED DESCRIPTION OF THE INVENTION

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4.1 DEFINITIONS

It must be noted that as used herein and in the appended claims, the singular forms "a", "an" and "the" include plural references unless the context clearly dictates otherwise.

15   The term "active" refers to those forms of the polypeptide which retain the biologic and/or immunologic activities of any naturally occurring polypeptide. According to the invention, the terms "biologically active" or "biological activity" refer to a protein or peptide having structural, regulatory or biochemical functions of a naturally occurring molecule. Likewise "immunologically active" or "immunological activity" refers to the

20   capability of the natural, recombinant or synthetic polypeptide to induce a specific immune response in appropriate animals or cells and to bind with specific antibodies.

The term "activated cells" as used in this application are those cells which are engaged in extracellular or intracellular membrane trafficking, including the export of secretory or enzymatic molecules as part of a normal or disease process.

25   The terms "complementary" or "complementarity" refer to the natural binding of polynucleotides by base pairing. For example, the sequence 5'-AGT-3' binds to the complementary sequence 3'-TCA-5'. Complementarity between two single-stranded molecules may be "partial" such that only some of the nucleic acids bind or it may be "complete" such that total complementarity exists between the single stranded molecules.

30   The degree of complementarity between the nucleic acid strands has significant effects on the efficiency and strength of the hybridization between the nucleic acid strands.

The term "embryonic stem cells (ES)" refers to a cell that can give rise to many differentiated cell types in an embryo or an adult, including the germ cells. The term "germ line stem cells (GSCs)" refers to stem cells derived from primordial stem cells that provide a steady and continuous source of germ cells for the production of gametes. The

5   term "primordial germ cells (PGCs)" refers to a small population of cells set aside from other cell lineages particularly from the yolk sac, mesenteries, or gonadal ridges during embryogenesis that have the potential to differentiate into germ cells and other cells. PGCs are the source from which GSCs and ES cells are derived The PGCs, the GSCs and the ES cells are capable of self-renewal. Thus these cells not only populate the germ

10   line and give rise to a plurality of terminally differentiated cells that comprise the adult specialized organs, but are able to regenerate themselves.

The term "expression modulating fragment," EMF, means a series of nucleotides which modulates the expression of an operably linked ORF or another EMF.

As used herein, a sequence is said to "modulate the expression of an operably

15   linked sequence" when the expression of the sequence is altered by the presence of the EMF. EMFs include, but are not limited to, promoters, and promoter modulating sequences (inducible elements). One class of EMFs are nucleic acid fragments which induce the expression of an operably linked ORF in response to a specific regulatory factor or physiological event.

20   The terms "nucleotide sequence" or "nucleic acid" or "polynucleotide" or "oligonculeotide" are used interchangeably and refer to a heteropolymer of nucleotides or the sequence of these nucleotides. These phrases also refer to DNA or RNA of genomic or synthetic origin which may be single-stranded or double-stranded and may represent the sense or the antisense strand, to peptide nucleic acid (PNA) or to any DNA-like or

25   RNA-like material. In the sequences herein A is adenine, C is cytosine, T is thymine, G is guanine and N is A, C, G or T (U). It is contemplated that where the polynucleotide is RNA, the T (thymine) in the sequences provided herein is substituted with U (uracil). Generally, nucleic acid segments provided by this invention may be assembled from fragments of the genome and short oligonucleotide linkers, or from a series of

30   oligonucleotides, or from individual nucleotides, to provide a synthetic nucleic acid

which is capable of being expressed in a recombinant transcriptional unit comprising
regulatory elements derived from a microbial or viral operon, or a eukaryotic gene.

The terms "oligonucleotide fragment" or a "polynucleotide fragment", "portion,"
or "segment" or "probe" or "primer" are used interchangeably and refer to a sequence of

5   nucleotide residues which are at least about 5 nucleotides, more preferably at least about
7 nucleotides, more preferably at least about 9 nucleotides, more preferably at least about
11 nucleotides and most preferably at least about 17 nucleotides. The fragment is
preferably less than about 500 nucleotides, preferably less than about 200 nucleotides,
more preferably less than about 100 nucleotides, more preferably less than about 50

10   nucleotides and most preferably less than 30 nucleotides. Preferably the probe is from
about 6 nucleotides to about 200 nucleotides, preferably from about 15 to about 50
nucleotides, more preferably from about 17 to 30 nucleotides and most preferably from
about 20 to 25 nucleotides. Preferably the fragments can be used in polymerase chain
reaction (PCR), various hybridization procedures or microarray procedures to identify or

15   amplify identical or related parts of mRNA or DNA molecules. A fragment or segment
may uniquely identify each polynucleotide sequence of the present invention. Preferably
the fragment comprises a sequence substantially similar to any one of SEQ ID NOs:1-20.

Probes may, for example, be used to determine whether specific mRNA
molecules are present in a cell or tissue or to isolate similar nucleic acid sequences from

20   chromosomal DNA as described by Walsh et al. (Walsh, P.S. et al., 1992, PCR Methods
Appl 1:241-250). They may be labeled by nick translation, Klenow fill-in reaction, PCR,
or other methods well known in the art. Probes of the present invention, their preparation
and/or labeling are elaborated in Sambrook, J. et al., 1989, Molecular Cloning: A
Laboratory Manual, Cold Spring Harbor Laboratory, NY; or Ausubel, F.M. et al., 1989,

25   Current Protocols in Molecular Biology, John Wiley & Sons, New York NY, both of
which are incorporated herein by reference in their entirety.

The nucleic acid sequences of the present invention also include the sequence
information from the nucleic acid sequences of SEQ ID NO:1-739. The sequence
information can be a segment of any one of SEQ ID NO:1-739 that uniquely identifies or

30   represents the sequence information of that sequence of SEQ ID NO:1-739. One such
segment can be a twenty-mer nucleic acid sequence because the probability that a twenty-

mer is fully matched in the human genome is 1 in 300. In the human genome, there are

three billion base pairs in one set of chromosomes. Because 4^{20} possible twenty-mers

exist, there are 300 times more twenty-mers than there are base pairs in a set of human

chromosomes. Using the same analysis, the probability for a seventeen-mer to be fully

5   matched in the human genome is approximately 1 in 5. When these segments are used in

arrays for expression studies, fifteen-mer segments can be used. The probability that the

fifteen-mer is fully matched in the expressed sequences is also approximately one in five

because expressed sequences comprise less than approximately 5% of the entire genome

sequence.

10   Similarly, when using sequence information for detecting a single mismatch, a

segment can be a twenty-five mer. The probability that the twenty-five mer would appear in

a human genome with a single mismatch is calculated by multiplying the probability for a

full match ($1 \div 4^{25}$) times the increased probability for mismatch at each nucleotide position

(3 x 25). The probability that an eighteen mer with a single mismatch can be detected in an

15   array for expression studies is approximately one in five. The probability that a twenty-mer

with a single mismatch can be detected in a human genome is approximately one in five.

The term "open reading frame," ORF, means a series of nucleotide triplets coding

for amino acids without any termination codons and is a sequence translatable into

protein.

20   The terms "operably linked" or "operably associated" refer to functionally related

nucleic acid sequences. For example, a promoter is operably associated or operably

linked with a coding sequence if the promoter controls the transcription of the coding

sequence. While operably linked nucleic acid sequences can be contiguous and in the

same reading frame, certain genetic elements e.g. repressor genes are not contiguously

25   linked to the coding sequence but still control transcription/translation of the coding

sequence.

The term "pluripotent" refers to the capability of a cell to differentiate into a

number of differentiated cell types that are present in an adult organism. A pluripotent

cell is restricted in its differentiation capability in comparison to a totipotent cell.

30   The terms "polypeptide" or "peptide" or "amino acid sequence" refer to an

oligopeptide, peptide, polypeptide or protein sequence or fragment thereof and to

naturally occurring or synthetic molecules. A polypeptide "fragment," "portion," or "segment" is a stretch of amino acid residues of at least about 5 amino acids, preferably at least about 7 amino acids, more preferably at least about 9 amino acids and most preferably at least about 17 or more amino acids. The peptide preferably is not greater than about 200 amino acids, more preferably less than 150 amino acids and most preferably less than 100 amino acids. Preferably the peptide is from about 5 to about 200 amino acids. To be active, any polypeptide must have sufficient length to display biological and/or immunological activity.

The term "naturally occurring polypeptide" refers to polypeptides produced by cells that have not been genetically engineered and specifically contemplates various polypeptides arising from post-translational modifications of the polypeptide including, but not limited to, acetylation, carboxylation, glycosylation, phosphorylation, lipidation and acylation.

The term "translated protein coding portion" means a sequence which encodes for the full length protein which may include any leader sequence or any processing sequence.

The term "mature protein coding sequence" means a sequence which encodes a peptide or protein without a signal or leader sequence. The "mature protein portion" means that portion of the protein which does not include a signal or leader sequence. The peptide may have been produced by processing in the cell which removes any leader/signal sequence. The mature protein portion may or may not include the initial methionine residue. The methionine residue may be removed from the protein during processing in the cell. The peptide may be produced synthetically or the protein may have been produced using a polynucleotide only encoding for the mature protein coding sequence.

The term "derivative" refers to polypeptides chemically modified by such techniques as ubiquitination, labeling (e.g., with radionuclides or various enzymes), covalent polymer attachment such as pegylation (derivatization with polyethylene glycol) and insertion or substitution by chemical synthesis of amino acids such as ornithine, which do not normally occur in human proteins.

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The term "variant"(or "analog") refers to any polypeptide differing from naturally occurring polypeptides by amino acid insertions, deletions, and substitutions, created using, *e g.*, recombinant DNA techniques. Guidance in determining which amino acid residues may be replaced, added or deleted without abolishing activities of interest, may

5   be found by comparing the sequence of the particular polypeptide with that of homologous peptides and minimizing the number of amino acid sequence changes made in regions of high homology (conserved regions) or by replacing amino acids with consensus sequence.

Alternatively, recombinant variants encoding these same or similar polypeptides

10   may be synthesized or selected by making use of the "redundancy" in the genetic code. Various codon substitutions, such as the silent changes which produce various restriction sites, may be introduced to optimize cloning into a plasmid or viral vector or expression in a particular prokaryotic or eukaryotic system. Mutations in the polynucleotide sequence may be reflected in the polypeptide or domains of other peptides added to the

15   polypeptide to modify the properties of any part of the polypeptide, to change characteristics such as ligand-binding affinities, interchain affinities, or degradation/turnover rate.

Preferably, amino acid "substitutions" are the result of replacing one amino acid with another amino acid having similar structural and/or chemical properties, *i.e.*,

20   conservative amino acid replacements. "Conservative" amino acid substitutions may be made on the basis of similarity in polarity, charge, solubility, hydrophobicity, hydrophilicity, and/or the amphipathic nature of the residues involved. For example, nonpolar (hydrophobic) amino acids include alanine, leucine, isoleucine, valine, proline, phenylalanine, tryptophan, and methionine; polar neutral amino acids include glycine,

25   serine, threonine, cysteine, tyrosine, asparagine, and glutamine; positively charged (basic) amino acids include arginine, lysine, and histidine; and negatively charged (acidic) amino acids include aspartic acid and glutamic acid. "Insertions" or "deletions" are preferably in the range of about 1 to 20 amino acids, more preferably 1 to 10 amino acids. The variation allowed may be experimentally determined by systematically making insertions,

30   deletions, or substitutions of amino acids in a polypeptide molecule using recombinant DNA techniques and assaying the resulting recombinant variants for activity.

Alternatively, where alteration of function is desired, insertions, deletions or non-conservative alterations can be engineered to produce altered polypeptides. Such alterations can, for example, alter one or more of the biological functions or biochemical characteristics of the polypeptides of the invention. For example, such alterations may

5   change polypeptide characteristics such as ligand-binding affinities, interchain affinities, or degradation/turnover rate. Further, such alterations can be selected so as to generate polypeptides that are better suited for expression, scale up and the like in the host cells chosen for expression. For example, cysteine residues can be deleted or substituted with another amino acid residue in order to eliminate disulfide bridges.

10   The terms "purified" or "substantially purified" as used herein denotes that the indicated nucleic acid or polypeptide is present in the substantial absence of other biological macromolecules, *e.g.*, polynucleotides, proteins, and the like. In one embodiment, the polynucleotide or polypeptide is purified such that it constitutes at least 95% by weight, more preferably at least 99% by weight, of the indicated biological

15   macromolecules present (but water, buffers, and other small molecules, especially molecules having a molecular weight of less than 1000 daltons, can be present).

The term "isolated" as used herein refers to a nucleic acid or polypeptide separated from at least one other component (e.g., nucleic acid or polypeptide) present with the nucleic acid or polypeptide in its natural source. In one embodiment, the nucleic

20   acid or polypeptide is found in the presence of (if anything) only a solvent, buffer, ion, or other component normally present in a solution of the same. The terms "isolated" and "purified" do not encompass nucleic acids or polypeptides present in their natural source.

The term "recombinant," when used herein to refer to a polypeptide or protein, means that a polypeptide or protein is derived from recombinant (*e.g.*, microbial, insect,

25   or mammalian) expression systems. "Microbial" refers to recombinant polypeptides or proteins made in bacterial or fungal (e.g., yeast) expression systems. As a product, "recombinant microbial" defines a polypeptide or protein essentially free of native endogenous substances and unaccompanied by associated native glycosylation. Polypeptides or proteins expressed in most bacterial cultures, *e.g.*, *E. coli*, will be free of

30   glycosylation modifications; polypeptides or proteins expressed in yeast will have a glycosylation pattern in general different from those expressed in mammalian cells.

The term "recombinant expression vehicle or vector" refers to a plasmid or phage or virus or vector, for expressing a polypeptide from a DNA (RNA) sequence. An expression vehicle can comprise a transcriptional unit comprising an assembly of (1) a genetic element or elements having a regulatory role in gene expression, for example,

5   promoters or enhancers, (2) a structural or coding sequence which is transcribed into mRNA and translated into protein, and (3) appropriate transcription initiation and termination sequences. Structural units intended for use in yeast or eukaryotic expression systems preferably include a leader sequence enabling extracellular secretion of translated protein by a host cell. Alternatively, where recombinant protein is expressed

10   without a leader or transport sequence, it may include an amino terminal methionine residue. This residue may or may not be subsequently cleaved from the expressed recombinant protein to provide a final product.

     The term "recombinant expression system" means host cells which have stably integrated a recombinant transcriptional unit into chromosomal DNA or carry the

15   recombinant transcriptional unit extrachromosomally. Recombinant expression systems as defined herein will express heterologous polypeptides or proteins upon induction of the regulatory elements linked to the DNA segment or synthetic gene to be expressed. This term also means host cells which have stably integrated a recombinant genetic element or elements having a regulatory role in gene expression, for example, promoters

20   or enhancers. Recombinant expression systems as defined herein will express polypeptides or proteins endogenous to the cell upon induction of the regulatory elements linked to the endogenous DNA segment or gene to be expressed. The cells can be prokaryotic or eukaryotic.

     The term "secreted" includes a protein that is transported across or through a

25   membrane, including transport as a result of signal sequences in its amino acid sequence when it is expressed in a suitable host cell. "Secreted" proteins include without limitation proteins secreted wholly (e.g., soluble proteins) or partially (e.g., receptors) from the cell in which they are expressed. "Secreted" proteins also include without limitation proteins that are transported across the membrane of the endoplasmic reticulum. "Secreted"

30   proteins are also intended to include proteins containing non-typical signal sequences (e.g. Interleukin-1 Beta, see Krasney, P.A. and Young, P.R. (1992) Cytokine 4(2):134

-143) and factors released from damaged cells (e.g. Interleukin-1 Receptor Antagonist, see Arend, W.P. et. al. (1998) Annu. Rev. Immunol. 16:27-55)

Where desired, an expression vector may be designed to contain a "signal or leader sequence" which will direct the polypeptide through the membrane of a cell. Such
5   a sequence may be naturally present on the polypeptides of the present invention or provided from heterologous protein sources by recombinant DNA techniques.

The term "stringent" is used to refer to conditions that are commonly understood in the art as stringent. Stringent conditions can include highly stringent conditions (i.e., hybridization to filter-bound DNA in 0.5 M NaHPO$_4$, 7% sodium dodecyl sulfate (SDS),
10   1 mM EDTA at 65°C, and washing in 0.1X SSC/0.1% SDS at 68°C), and moderately stringent conditions (i.e., washing in 0.2X SSC/0.1% SDS at 42°C). Other exemplary hybridization conditions are described herein in the examples.

In instances of hybridization of deoxyoligonucleotides, additional exemplary stringent hybridization conditions include washing in 6X SSC/0.05% sodium
15   pyrophosphate at 37°C (for 14-base oligonucleotides), 48°C (for 17-base oligos), 55°C (for 20-base oligonucleotides), and 60°C (for 23-base oligonucleotides).

As used herein, "substantially equivalent" can refer both to nucleotide and amino acid sequences, for example a mutant sequence, that varies from a reference sequence by one or more substitutions, deletions, or additions, the net effect of which does not result
20   in an adverse functional dissimilarity between the reference and subject sequences. Typically, such a substantially equivalent sequence varies from one of those listed herein by no more than about 35% (i.e., the number of individual residue substitutions, additions, and/or deletions in a substantially equivalent sequence, as compared to the corresponding reference sequence, divided by the total number of residues in the
25   substantially equivalent sequence is about 0.35 or less). Such a sequence is said to have 65% sequence identity to the listed sequence. In one embodiment, a substantially equivalent, e.g., mutant, sequence of the invention varies from a listed sequence by no more than 30% (70% sequence identity); in a variation of this embodiment, by no more than 25% (75% sequence identity); and in a further variation of this embodiment, by no
30   more than 20% (80% sequence identity) and in a further variation of this embodiment, by no more than 10% (90% sequence identity) and in a further variation of this embodiment,

by no more that 5% (95% sequence identity). Substantially equivalent, *e.g.*, mutant, amino acid sequences according to the invention preferably have at least 80% sequence identity with a listed amino acid sequence, more preferably at least 90% sequence identity. Substantially equivalent nucleotide sequences of the invention can have lower

5   percent sequence identities, taking into account, for example, the redundancy or degeneracy of the genetic code. Preferably, nucleotide sequence has at least about 65% identity, more preferably at least about 75% identity, and most preferably at least about 95% identity. For the purposes of the present invention, sequences having substantially equivalent biological activity and substantially equivalent expression characteristics are

10   considered substantially equivalent. For the purposes of determining equivalence, truncation of the mature sequence (*e.g.*, via a mutation which creates a spurious stop codon) should be disregarded. Sequence identity may be determined, e.g., using the Jotun Hein method (Hein, J. (1990) Methods Enzymol. 183:626-645). Identity between sequences can also be determined by other methods known in the art, e.g. by varying

15   hybridization conditions.

The term "totipotent" refers to the capability of a cell to differentiate into all of the cell types of an adult organism.

The term "transformation" means introducing DNA into a suitable host cell so that the DNA is replicable, either as an extrachromosomal element, or by chromosomal

20   integration. The term "transfection" refers to the taking up of an expression vector by a suitable host cell, whether or not any coding sequences are in fact expressed. The term "infection" refers to the introduction of nucleic acids into a suitable host cell by use of a virus or viral vector.

As used herein, an "uptake modulating fragment," UMF, means a series of

25   nucleotides which mediate the uptake of a linked DNA fragment into a cell. UMFs can be readily identified using known UMFs as a target sequence or target motif with the computer-based systems described below. The presence and activity of a UMF can be confirmed by attaching the suspected UMF to a marker sequence. The resulting nucleic acid molecule is then incubated with an appropriate host under appropriate conditions and

30   the uptake of the marker sequence is determined. As described above, a UMF will increase the frequency of uptake of a linked marker sequence.

Each of the above terms is meant to encompass all that is described for each,
unless the context dictates otherwise.

4.2 NUCLEIC ACIDS OF THE INVENTION

5   Nucleotide sequences of the invention are set forth in the Sequence Listing.

The isolated polynucleotides of the invention include a polynucleotide comprising
the nucleotide sequences of SEQ ID NO:1-739 ; a polynucleotide encoding any one of
the peptide sequences of SEQ ID NO:740-1478; and a polynucleotide comprising the
nucleotide sequence encoding the mature protein coding sequence of the polypeptides of
10   any one of SEQ ID NO:740-1478. The polynucleotides of the present invention also
include, but are not limited to, a polynucleotide that hybridizes under stringent conditions
to (a) the complement of any of the nucleotides sequences of SEQ ID NO:1-739 ; (b)
nucleotide sequences encoding any one of the amino acid sequences set forth in the
Sequence Listing; (c) a polynucleotide which is an allelic variant of any polynucleotide
15   recited above; (d) a polynucleotide which encodes a species homolog of any of the
proteins recited above; or (e) a polynucleotide that encodes a polypeptide comprising a
specific domain or truncation of the polypeptides of SEQ ID NO: 740-1478. Domains of
interest may depend on the nature of the encoded polypeptide; e.g., domains in receptor-
like polypeptides include ligand-binding, extracellular, transmembrane, or cytoplasmic
20   domains, or combinations thereof; domains in immunoglobulin-like proteins include the
variable immunoglobulin-like domains; domains in enzyme-like polypeptides include
catalytic and substrate binding domains; and domains in ligand polypeptides include
receptor-binding domains.

The polynucleotides of the invention include naturally occurring or wholly or
25   partially synthetic DNA, e.g., cDNA and genomic DNA, and RNA, e.g., mRNA. The
polynucleotides may include all of the coding region of the cDNA or may represent a
portion of the coding region of the cDNA.

The present invention also provides genes corresponding to the cDNA sequences
disclosed herein. The corresponding genes can be isolated in accordance with known
30   methods using the sequence information disclosed herein. Such methods include the
preparation of probes or primers from the disclosed sequence information for identification

and/or amplification of genes in appropriate genomic libraries or other sources of genomic materials. Further 5' and 3' sequence can be obtained using methods known in the art. For example, full length cDNA or genomic DNA that corresponds to any of the polynucleotides of SEQ ID NO:1-739 can be obtained by screening appropriate cDNA or genomic DNA

5   libraries under suitable hybridization conditions using any of the polynucleotides of SEQ ID NO:1-739 or a portion thereof as a probe. Alternatively, the polynucleotides of SEQ ID NO:1-739 may be used as the basis for suitable primer(s) that allow identification and/or amplification of genes in appropriate genomic DNA or cDNA libraries.

The nucleic acid sequences of the invention can be assembled from ESTs and

10   sequences (including cDNA and genomic sequences) obtained from one or more public databases, such as dbEST, gbpri, and UniGene. The EST sequences can provide identifying sequence information, representative fragment or segment information, or novel segment information for the full-length gene.

The polynucleotides of the invention also provide polynucleotides including

15   nucleotide sequences that are substantially equivalent to the polynucleotides recited above. Polynucleotides according to the invention can have, e.g., at least about 65%, at least about 70%, at least about 75%, at least about 80%, more typically at least about 90%, and even more typically at least about 95%, sequence identity to a polynucleotide recited above.

20   Included within the scope of the nucleic acid sequences of the invention are nucleic acid sequence fragments that hybridize under stringent conditions to any of the nucleotide sequences of SEQ ID NO:1-739, or complements thereof, which fragment is greater than about 5 nucleotides, preferably 7 nucleotides, more preferably greater than 9 nucleotides and most preferably greater than 17 nucleotides. Fragments of, e.g. 15, 17, or

25   20 nucleotides or more that are selective for (i.e. specifically hybridize to any one of the polynucleotides of the invention) are contemplated. Probes capable of specifically hybridizing to a polynucleotide can differentiate polynucleotide sequences of the invention from other polynucleotide sequences in the same family of genes or can differentiate human genes from genes of other species, and are preferably based on

30   unique nucleotide sequences.

The sequences falling within the scope of the present invention are not limited to these specific sequences, but also include allelic and species variations thereof. Allelic and species variations can be routinely determined by comparing the sequence provided SEQ ID NO:1-739, a representative fragment thereof, or a nucleotide sequence at least 90%

5   identical, preferably 95% identical, to SEQ ID NO:1-739 with a sequence from another isolate of the same species. Furthermore, to accommodate codon variability, the invention includes nucleic acid molecules coding for the same amino acid sequences as do the specific ORFs disclosed herein. In other words, in the coding region of an ORF, substitution of one codon for another codon that encodes the same amino acid is expressly contemplated.

10   The nearest neighbor or homology result for the nucleic acids of the present invention, including SEQ ID NO:1-739, can be obtained by searching a database using an algorithm or a program. Preferably, a BLAST which stands for Basic Local Alignment Search Tool is used to search for local sequence alignments (Altshul, S.F. J Mol. Evol. 36 290-300 (1993) and Altschul S.F. et al. J. Mol. Biol. 21:403-410 (1990)). Alternatively a

15   FASTA version 3 search against Genpept, using Fastxy algorithm.

Species homologs (or orthologs) of the disclosed polynucleotides and proteins are also provided by the present invention. Species homologs may be isolated and identified by making suitable probes or primers from the sequences provided herein and screening a suitable nucleic acid source from the desired species.

20   The invention also encompasses allelic variants of the disclosed polynucleotides or proteins; that is, naturally-occurring alternative forms of the isolated polynucleotide which also encode proteins which are identical, homologous or related to that encoded by the polynucleotides.

The nucleic acid sequences of the invention are further directed to sequences

25   which encode variants of the described nucleic acids. These amino acid sequence variants may be prepared by methods known in the art by introducing appropriate nucleotide changes into a native or variant polynucleotide. There are two variables in the construction of amino acid sequence variants: the location of the mutation and the nature of the mutation. Nucleic acids encoding the amino acid sequence variants are preferably

30   constructed by mutating the polynucleotide to encode an amino acid sequence that does not occur in nature. These nucleic acid alterations can be made at sites that differ in the

nucleic acids from different species (variable positions) or in highly conserved regions (constant regions). Sites at such locations will typically be modified in series, *e.g.*, by substituting first with conservative choices (*e.g.*, hydrophobic amino acid to a different hydrophobic amino acid) and then with more distant choices (*e.g.*, hydrophobic amino

5   acid to a charged amino acid), and then deletions or insertions may be made at the target site. Amino acid sequence deletions generally range from about 1 to 30 residues, preferably about 1 to 10 residues, and are typically contiguous. Amino acid insertions include amino- and/or carboxyl-terminal fusions ranging in length from one to one hundred or more residues, as well as intrasequence insertions of single or multiple amino

10   acid residues. Intrasequence insertions may range generally from about 1 to 10 amino residues, preferably from 1 to 5 residues. Examples of terminal insertions include the heterologous signal sequences necessary for secretion or for intracellular targeting in different host cells and sequences such as FLAG or poly-histidine sequences useful for purifying the expressed protein.

15   In a preferred method, polynucleotides encoding the novel amino acid sequences are changed via site-directed mutagenesis. This method uses oligonucleotide sequences to alter a polynucleotide to encode the desired amino acid variant, as well as sufficient adjacent nucleotides on both sides of the changed amino acid to form a stable duplex on either side of the site of being changed. In general, the techniques of site-directed

20   mutagenesis are well known to those of skill in the art and this technique is exemplified by publications such as, Edelman et al., *DNA* 2:183 (1983). A versatile and efficient method for producing site-specific changes in a polynucleotide sequence was published by Zoller and Smith, *Nucleic Acids Res.* 10:6487-6500 (1982). PCR may also be used to create amino acid sequence variants of the novel nucleic acids. When small amounts of

25   template DNA are used as starting material, primer(s) that differs slightly in sequence from the corresponding region in the template DNA can generate the desired amino acid variant. PCR amplification results in a population of product DNA fragments that differ from the polynucleotide template encoding the polypeptide at the position specified by the primer. The product DNA fragments replace the corresponding region in the plasmid

30   and this gives a polynucleotide encoding the desired amino acid variant.

A further technique for generating amino acid variants is the cassette mutagenesis technique described in Wells et al., *Gene* 34:315 (1985); and other mutagenesis techniques well known in the art, such as, for example, the techniques in Sambrook et al., supra, and *Current Protocols in Molecular Biology*, Ausubel et al. Due to the inherent

5   degeneracy of the genetic code, other DNA sequences which encode substantially the same or a functionally equivalent amino acid sequence may be used in the practice of the invention for the cloning and expression of these novel nucleic acids. Such DNA sequences include those which are capable of hybridizing to the appropriate novel nucleic acid sequence under stringent conditions.

10   Polynucleotides encoding preferred polypeptide truncations of the invention can be used to generate polynucleotides encoding chimeric or fusion proteins comprising one or more domains of the invention and heterologous protein sequences.

The polynucleotides of the invention additionally include the complement of any of the polynucleotides recited above. The polynucleotide can be DNA (genomic, cDNA,

15   amplified, or synthetic) or RNA. Methods and algorithms for obtaining such polynucleotides are well known to those of skill in the art and can include, for example, methods for determining hybridization conditions that can routinely isolate polynucleotides of the desired sequence identities.

In accordance with the invention, polynucleotide sequences comprising the

20   mature protein coding sequences corresponding to any one of SEQ ID NO:1-739, or functional equivalents thereof, may be used to generate recombinant DNA molecules that direct the expression of that nucleic acid, or a functional equivalent thereof, in appropriate host cells. Also included are the cDNA inserts of any of the clones identified herein.

25   A polynucleotide according to the invention can be joined to any of a variety of other nucleotide sequences by well-established recombinant DNA techniques (see Sambrook J et al. (1989) Molecular Cloning: A Laboratory Manual, Cold Spring Harbor Laboratory, NY). Useful nucleotide sequences for joining to polynucleotides include an assortment of vectors, e.g., plasmids, cosmids, lambda phage derivatives, phagemids, and

30   the like, that are well known in the art. Accordingly, the invention also provides a vector including a polynucleotide of the invention and a host cell containing the polynucleotide.

In general, the vector contains an origin of replication functional in at least one organism, convenient restriction endonuclease sites, and a selectable marker for the host cell. Vectors according to the invention include expression vectors, replication vectors, probe generation vectors, and sequencing vectors. A host cell according to the invention can be

5   a prokaryotic or eukaryotic cell and can be a unicellular organism or part of a multicellular organism.

The present invention further provides recombinant constructs comprising a nucleic acid having any of the nucleotide sequences of SEQ ID NO:1-739 or a fragment thereof or any other polynucleotides of the invention. In one embodiment, the

10   recombinant constructs of the present invention comprise a vector, such as a plasmid or viral vector, into which a nucleic acid having any of the nucleotide sequences of SEQ ID NO:1-739 or a fragment thereof is inserted, in a forward or reverse orientation. In the case of a vector comprising one of the ORFs of the present invention, the vector may further comprise regulatory sequences, including for example, a promoter, operably

15   linked to the ORF. Large numbers of suitable vectors and promoters are known to those of skill in the art and are commercially available for generating the recombinant constructs of the present invention. The following vectors are provided by way of example. Bacterial: pBs, phagescript, PsiX174, pBluescript SK, pBs KS, pNH8a, pNH16a, pNH18a, pNH46a (Stratagene); pTrc99A, pKK223-3, pKK233-3, pDR540,

20   pRIT5 (Pharmacia). Eukaryotic: pWLneo, pSV2cat, pOG44, PXTI, pSG (Stratagene) pSVK3, pBPV, pMSG, pSVL (Pharmacia).

The isolated polynucleotide of the invention may be operably linked to an expression control sequence such as the pMT2 or pED expression vectors disclosed in Kaufman et al., *Nucleic Acids Res.* 19, 4485-4490 (1991), in order to produce the protein

25   recombinantly. Many suitable expression control sequences are known in the art. General methods of expressing recombinant proteins are also known and are exemplified in R. Kaufman, *Methods in Enzymology* 185, 537-566 (1990). As defined herein "operably linked" means that the isolated polynucleotide of the invention and an expression control sequence are situated within a vector or cell in such a way that the

30   protein is expressed by a host cell which has been transformed (transfected) with the ligated polynucleotide/expression control sequence.

Promoter regions can be selected from any desired gene using CAT (chloramphenicol transferase) vectors or other vectors with selectable markers. Two appropriate vectors are pKK232-8 and pCM7. Particular named bacterial promoters include lacI, lacZ, T3, T7, gpt, lambda PR, and trc. Eukaryotic promoters include CMV

5   immediate early, HSV thymidine kinase, early and late SV40, LTRs from retrovirus, and mouse metallothionein-I. Selection of the appropriate vector and promoter is well within the level of ordinary skill in the art. Generally, recombinant expression vectors will include origins of replication and selectable markers permitting transformation of the host cell, e.g., the ampicillin resistance gene of E. coli and S. cerevisiae TRP1 gene, and a

10   promoter derived from a highly-expressed gene to direct transcription of a downstream structural sequence. Such promoters can be derived from operons encoding glycolytic enzymes such as 3-phosphoglycerate kinase (PGK), a-factor, acid phosphatase, or heat shock proteins, among others. The heterologous structural sequence is assembled in appropriate phase with translation initiation and termination sequences, and preferably, a

15   leader sequence capable of directing secretion of translated protein into the periplasmic space or extracellular medium. Optionally, the heterologous sequence can encode a fusion protein including an amino terminal identification peptide imparting desired characteristics, e.g., stabilization or simplified purification of expressed recombinant product. Useful expression vectors for bacterial use are constructed by inserting a

20   structural DNA sequence encoding a desired protein together with suitable translation initiation and termination signals in operable reading phase with a functional promoter. The vector will comprise one or more phenotypic selectable markers and an origin of replication to ensure maintenance of the vector and to, if desirable, provide amplification within the host. Suitable prokaryotic hosts for transformation include E. coli, Bacillus

25   subtilis, Salmonella typhimurium and various species within the genera Pseudomonas, Streptomyces, and Staphylococcus, although others may also be employed as a matter of choice.

As a representative but non-limiting example, useful expression vectors for bacterial use can comprise a selectable marker and bacterial origin of replication derived

30   from commercially available plasmids comprising genetic elements of the well known cloning vector pBR322 (ATCC 37017). Such commercial vectors include, for example,

pKK223-3 (Pharmacia Fine Chemicals, Uppsala, Sweden) and GEM 1 (Promega Biotech, Madison, WI, USA). These pBR322 "backbone" sections are combined with an appropriate promoter and the structural sequence to be expressed. Following transformation of a suitable host strain and growth of the host strain to an appropriate cell

5   density, the selected promoter is induced or derepressed by appropriate means (e.g., temperature shift or chemical induction) and cells are cultured for an additional period. Cells are typically harvested by centrifugation, disrupted by physical or chemical means, and the resulting crude extract retained for further purification.

Polynucleotides of the invention can also be used to induce immune responses.

10   For example, as described in Fan et al., Nat. Biotech. 17:870-872 (1999), incorporated herein by reference, nucleic acid sequences encoding a polypeptide may be used to generate antibodies against the encoded polypeptide following topical administration of naked plasmid DNA or following injection, and preferably intramuscular injection of the DNA. The nucleic acid sequences are preferably inserted in a recombinant expression

15   vector and may be in the form of naked DNA.

4.3 ANTISENSE

Another aspect of the invention pertains to isolated antisense nucleic acid molecules that are hybridizable to or complementary to the nucleic acid molecule

20   comprising the nucleotide sequence of SEQ ID NO:1-739, or fragments, analogs or derivatives thereof. An "antisense" nucleic acid comprises a nucleotide sequence that is complementary to a "sense" nucleic acid encoding a protein, e.g., complementary to the coding strand of a double-stranded cDNA molecule or complementary to an mRNA sequence. In specific aspects, antisense nucleic acid molecules are provided that

25   comprise a sequence complementary to at least about 10, 25, 50, 100, 250 or 500 nucleotides or an entire coding strand, or to only a portion thereof. Nucleic acid molecules encoding fragments, homologs, derivatives and analogs of a protein of any of SEQ ID NO:740-1478 or antisense nucleic acids complementary to a nucleic acid sequence of SEQ ID NO:1-739 are additionally provided.

30   In one embodiment, an antisense nucleic acid molecule is antisense to a "coding region" of the coding strand of a nucleotide sequence of the invention. The term "coding

region" refers to the region of the nucleotide sequence comprising codons which are translated into amino acid residues. In another embodiment, the antisense nucleic acid molecule is antisense to a "noncoding region" of the coding strand of a nucleotide sequence of the invention. The term "noncoding region" refers to 5' and 3' sequences

5   which flank the coding region that are not translated into amino acids (*i.e.*, also referred to as 5' and 3' untranslated regions).

Given the coding strand sequences encoding a nucleic acid disclosed herein (*e.g.*, SEQ ID NO:1-739 , antisense nucleic acids of the invention can be designed according to the rules of Watson and Crick or Hoogsteen base pairing. The antisense nucleic acid

10   molecule can be complementary to the entire coding region of a mRNA, but more preferably is an oligonucleotide that is antisense to only a portion of the coding or noncoding region of a mRNA. For example, the antisense oligonucleotide can be complementary to the region surrounding the translation start site of a mRNA. An antisense oligonucleotide can be, for example, about 5, 10, 15, 20, 25, 30, 35, 40, 45 or

15   50 nucleotides in length. An antisense nucleic acid of the invention can be constructed using chemical synthesis or enzymatic ligation reactions using procedures known in the art. For example, an antisense nucleic acid (*e.g.*, an antisense oligonucleotide) can be chemically synthesized using naturally occurring nucleotides or variously modified nucleotides designed to increase the biological stability of the molecules or to increase

20   the physical stability of the duplex formed between the antisense and sense nucleic acids, *e.g.*, phosphorothioate derivatives and acridine substituted nucleotides can be used.

Examples of modified nucleotides that can be used to generate the antisense nucleic acid include: 5-fluorouracil, 5-bromouracil, 5-chlorouracil, 5-iodouracil, hypoxanthine, xanthine, 4-acetylcytosine, 5-(carboxyhydroxylmethyl) uracil,

25   5-carboxymethylaminomethyl-2-thiouridine, 5-carboxymethylaminomethyluracil, dihydrouracil, beta-D-galactosylqueosine, inosine, N6-isopentenyladenine, 1-methylguanine, 1-methylinosine, 2,2-dimethylguanine, 2-methyladenine, 2-methylguanine, 3-methylcytosine, 5-methylcytosine, N6-adenine, 7-methylguanine, 5-methylaminomethyluracil, 5-methoxyaminomethyl-2-thiouracil,

30   beta-D-mannosylqueosine, 5'-methoxycarboxymethyluracil, 5-methoxyuracil, 2-methylthio-N6-isopentenyladenine, uracil-5-oxyacetic acid (v), wybutoxosine,

pseudouracil, queosine, 2-thiocytosine, 5-methyl-2-thiouracil, 2-thiouracil, 4-thiouracil,

5-methyluracil, uracil-5-oxyacetic acid methylester, uracil-5-oxyacetic acid (v),

5-methyl-2-thiouracil, 3-(3-amino-3-N-2-carboxypropyl) uracil, (acp3)w, and

2,6-diaminopurine. Alternatively, the antisense nucleic acid can be produced biologically

5   using an expression vector into which a nucleic acid has been subcloned in an antisense

orientation (i.e., RNA transcribed from the inserted nucleic acid will be of an antisense

orientation to a target nucleic acid of interest, described further in the following

subsection).

The antisense nucleic acid molecules of the invention are typically administered

10   to a subject or generated in situ such that they hybridize with or bind to cellular mRNA

and/or genomic DNA encoding a protein according to the invention to thereby inhibit

expression of the protein, e.g., by inhibiting transcription and/or translation. The

hybridization can be by conventional nucleotide complementarity to form a stable duplex,

or, for example, in the case of an antisense nucleic acid molecule that binds to DNA

15   duplexes, through specific interactions in the major groove of the double helix. An

example of a route of administration of antisense nucleic acid molecules of the invention

includes direct injection at a tissue site. Alternatively, antisense nucleic acid molecules

can be modified to target selected cells and then administered systemically. For example,

for systemic administration, antisense molecules can be modified such that they

20   specifically bind to receptors or antigens expressed on a selected cell surface, e.g., by

linking the antisense nucleic acid molecules to peptides or antibodies that bind to cell

surface receptors or antigens. The antisense nucleic acid molecules can also be delivered

to cells using the vectors described herein. To achieve sufficient intracellular

concentrations of antisense molecules, vector constructs in which the antisense nucleic

25   acid molecule is placed under the control of a strong pol II or pol III promoter are

preferred.

In yet another embodiment, the antisense nucleic acid molecule of the invention is

an α-anomeric nucleic acid molecule. An α-anomeric nucleic acid molecule forms

specific double-stranded hybrids with complementary RNA in which, contrary to the usual

30   β-units, the strands run parallel to each other (Gaultier et al. (1987) Nucleic Acids Res 15:

6625-6641). The antisense nucleic acid molecule can also comprise a

2'-o-methylribonucleotide (Inoue *et al.* (1987) *Nucleic Acids Res* 15: 6131-6148) or a
chimeric RNA -DNA analogue (Inoue *et al.* (1987) *FEBS Lett* 215: 327-330).

4.4 RIBOZYMES AND PNA MOIETIES

5   In still another embodiment, an antisense nucleic acid of the invention is a
ribozyme. Ribozymes are catalytic RNA molecules with ribonuclease activity that are
capable of cleaving a single-stranded nucleic acid, such as a mRNA, to which they have a
complementary region. Thus, ribozymes (*e.g.*, hammerhead ribozymes (described in
Haselhoff and Gerlach (1988) *Nature* 334:585-591)) can be used to catalytically cleave a
10   mRNA transcripts to thereby inhibit translation of a mRNA. A ribozyme having
specificity for a nucleic acid of the invention can be designed based upon the nucleotide
sequence of a DNA disclosed herein (*i.e.*, SEQ ID NO:1-739). For example, a derivative
of a Tetrahymena L-19 IVS RNA can be constructed in which the nucleotide sequence of
the active site is complementary to the nucleotide sequence to be cleaved in a
15   SECX-encoding mRNA. See, *e.g.*, Cech *et al.* U.S. Pat. No. 4,987,071; and Cech *et al.*
U.S. Pat. No. 5,116,742. Alternatively, SECX mRNA can be used to select a catalytic
RNA having a specific ribonuclease activity from a pool of RNA molecules. See, *e.g.*,
Bartel *et al.*, (1993) *Science* 261:1411-1418.

       Alternatively, gene expression can be inhibited by targeting nucleotide sequences
20   complementary to the regulatory region (*e.g.*, promoter and/or enhancers) to form triple
helical structures that prevent transcription of the gene in target cells. See generally,
Helene. (1991) *Anticancer Drug Des.* 6: 569-84; Helene. *et al.* (1992) *Ann. N.Y. Acad.
Sci.* 660:27-36; and Maher (1992) *Bioassays* 14: 807-15.

       In various embodiments, the nucleic acids of the invention can be modified at the
25   base moiety, sugar moiety or phosphate backbone to improve, *e.g.*, the stability,
hybridization, or solubility of the molecule. For example, the deoxyribose phosphate
backbone of the nucleic acids can be modified to generate peptide nucleic acids (see
Hyrup *et al.* (1996) *Bioorg Med Chem* 4: 5-23). As used herein, the terms "peptide
nucleic acids" or "PNAs" refer to nucleic acid mimics, *e.g.*, DNA mimics, in which the
30   deoxyribose phosphate backbone is replaced by a pseudopeptide backbone and only the
four natural nucleobases are retained. The neutral backbone of PNAs has been shown to

allow for specific hybridization to DNA and RNA under conditions of low ionic strength. The synthesis of PNA oligomers can be performed using standard solid phase peptide synthesis protocols as described in Hyrup *et al.* (1996) above; Perry-O'Keefe *et al.* (1996) *PNAS* 93: 14670-675.

5   PNAs of the invention can be used in therapeutic and diagnostic applications. For example, PNAs can be used as antisense or antigene agents for sequence-specific modulation of gene expression by, *e.g.*, inducing transcription or translation arrest or inhibiting replication. PNAs of the invention can also be used, *e.g.*, in the analysis of single base pair mutations in a gene by, *e.g.*, PNA directed PCR clamping; as artificial

10   restriction enzymes when used in combination with other enzymes, *e.g.*, S1 nucleases (Hyrup B. (1996) above); or as probes or primers for DNA sequence and hybridization (Hyrup *et al.* (1996), above; Perry-O'Keefe (1996), above).

          In another embodiment, PNAs of the invention can be modified, *e.g.*, to enhance their stability or cellular uptake, by attaching lipophilic or other helper groups to PNA, by

15   the formation of PNA-DNA chimeras, or by the use of liposomes or other techniques of drug delivery known in the art. For example, PNA-DNA chimeras can be generated that may combine the advantageous properties of PNA and DNA. Such chimeras allow DNA recognition enzymes, *e.g.*, RNase H and DNA polymerases, to interact with the DNA portion while the PNA portion would provide high binding affinity and specificity.

20   PNA-DNA chimeras can be linked using linkers of appropriate lengths selected in terms of base stacking, number of bonds between the nucleobases, and orientation (Hyrup (1996) above). The synthesis of PNA-DNA chimeras can be performed as described in Hyrup (1996) above and Finn *et al.* (1996) *Nucl Acids Res* 24: 3357-63. For example, a DNA chain can be synthesized on a solid support using standard phosphoramidite

25   coupling chemistry, and modified nucleoside analogs, *e.g.*, 5'-(4-methoxytrityl)amino-5'-deoxy-thymidine phosphoramidite, can be used between the PNA and the 5' end of DNA (Mag *et al.* (1989) *Nucl Acid Res* 17: 5973-88). PNA monomers are then coupled in a stepwise manner to produce a chimeric molecule with a 5' PNA segment and a 3' DNA segment (Finn *et al.* (1996) above). Alternatively,

30   chimeric molecules can be synthesized with a 5' DNA segment and a 3' PNA segment. See, Petersen *et al.* (1975) *Bioorg Med Chem Lett* 5: 1119-11124.

In other embodiments, the oligonucleotide may include other appended groups such as peptides (*e.g.*, for targeting host cell receptors *in vivo*), or agents facilitating transport across the cell membrane (see, *e.g.*, Letsinger *et al.*, 1989, *Proc. Natl. Acad. Sci. U.S.A.* 86:6553-6556; Lemaitre *et al.*, 1987, Proc. *Natl. Acad. Sci.* 84:648-652; PCT

5   Publication No. W088/09810) or the blood-brain barrier (see, *e.g.*, PCT Publication No. W089/10134). In addition, oligonucleotides can be modified with hybridization triggered cleavage agents (See, *e.g.*, Krol *et al.*, 1988, *BioTechniques* 6:958-976) or intercalating agents. (See, *e.g.*, Zon, 1988, *Pharm. Res.* 5: 539-549). To this end, the oligonucleotide may be conjugated to another molecule, *e.g.*, a peptide, a hybridization triggered

10   cross-linking agent, a transport agent, a hybridization-triggered cleavage agent, etc.

4.5 HOSTS

The present invention further provides host cells genetically engineered to contain the polynucleotides of the invention. For example, such host cells may contain nucleic

15   acids of the invention introduced into the host cell using known transformation, transfection or infection methods. The present invention still further provides host cells genetically engineered to express the polynucleotides of the invention, wherein such polynucleotides are in operative association with a regulatory sequence heterologous to the host cell which drives expression of the polynucleotides in the cell.

20   Knowledge of nucleic acid sequences allows for modification of cells to permit, or increase, expression of endogenous polypeptide. Cells can be modified (e.g., by homologous recombination) to provide increased polypeptide expression by replacing, in whole or in part, the naturally occurring promoter with all or part of a heterologous promoter so that the cells express the polypeptide at higher levels. The heterologous

25   promoter is inserted in such a manner that it is operatively linked to the encoding 'sequences. See, for example, PCT International Publication No. WO94/12650, PCT International Publication No. WO92/20808, and PCT International Publication No. WO91/09955. It is also contemplated that, in addition to heterologous promoter DNA, amplifiable marker DNA (e.g., ada, dhfr, and the multifunctional CAD gene which

30   encodes carbamyl phosphate synthase, aspartate transcarbamylase, and dihydroorotase) and/or intron DNA may be inserted along with the heterologous promoter DNA. If

linked to the coding sequence, amplification of the marker DNA by standard selection methods results in co-amplification of the desired protein coding sequences in the cells.

The host cell can be a higher eukaryotic host cell, such as a mammalian cell, a lower eukaryotic host cell, such as a yeast cell, or the host cell can be a prokaryotic cell,

5 such as a bacterial cell. Introduction of the recombinant construct into the host cell can be effected by calcium phosphate transfection, DEAE, dextran mediated transfection, or electroporation (Davis, L. et al., *Basic Methods in Molecular Biology* (1986)). The host cells containing one of the polynucleotides of the invention, can be used in conventional manners to produce the gene product encoded by the isolated fragment (in the case of an

10 ORF) or can be used to produce a heterologous protein under the control of the EMF.

Any host/vector system can be used to express one or more of the ORFs of the present invention. These include, but are not limited to, eukaryotic hosts such as HeLa cells, Cv-1 cell, COS cells, 293 cells, and Sf9 cells, as well as prokaryotic host such as *E. coli* and *B. subtilis*. The most preferred cells are those which do not normally express the

15 particular polypeptide or protein or which expresses the polypeptide or protein at low natural level. Mature proteins can be expressed in mammalian cells, yeast, bacteria, or other cells under the control of appropriate promoters. Cell-free translation systems can also be employed to produce such proteins using RNAs derived from the DNA constructs of the present invention. Appropriate cloning and expression vectors for use with

20 prokaryotic and eukaryotic hosts are described by Sambrook, et al., in Molecular Cloning: A Laboratory Manual, Second Edition, Cold Spring Harbor, New York (1989), the disclosure of which is hereby incorporated by reference.

Various mammalian cell culture systems can also be employed to express recombinant protein. Examples of mammalian expression systems include the COS-7

25 lines of monkey kidney fibroblasts, described by Gluzman, Cell 23:175 (1981). Other cell lines capable of expressing a compatible vector are, for example, the C127, monkey COS cells, Chinese Hamster Ovary (CHO) cells, human kidney 293 cells, human epidermal A431 cells, human Colo205 cells, 3T3 cells, CV-1 cells, other transformed primate cell lines, normal diploid cells, cell strains derived from *in vitro* culture of

30 primary tissue, primary explants, HeLa cells, mouse L cells, BHK, HL-60, U937, HaK or Jurkat cells. Mammalian expression vectors will comprise an origin of replication, a

suitable promoter and also any necessary ribosome binding sites, polyadenylation site, splice donor and acceptor sites, transcriptional termination sequences, and 5′ flanking nontranscribed sequences. DNA sequences derived from the SV40 viral genome, for example, SV40 origin, early promoter, enhancer, splice, and polyadenylation sites may be

5   used to provide the required nontranscribed genetic elements. Recombinant polypeptides and proteins produced in bacterial culture are usually isolated by initial extraction from cell pellets, followed by one or more salting-out, aqueous ion exchange or size exclusion chromatography steps. Protein refolding steps can be used, as necessary, in completing configuration of the mature protein. Finally, high performance liquid chromatography

10   (HPLC) can be employed for final purification steps. Microbial cells employed in expression of proteins can be disrupted by any convenient method, including freeze-thaw cycling, sonication, mechanical disruption, or use of cell lysing agents.

Alternatively, it may be possible to produce the protein in lower eukaryotes such as yeast or insects or in prokaryotes such as bacteria. Potentially suitable yeast strains

15   include *Saccharomyces cerevisiae, Schizosaccharomyces pombe, Kluyveromyces* strains, *Candida*, or any yeast strain capable of expressing heterologous proteins. Potentially suitable bacterial strains include *Escherichia coli, Bacillus subtilis, Salmonella typhimurium*, or any bacterial strain capable of expressing heterologous proteins. If the protein is made in yeast or bacteria, it may be necessary to modify the protein produced

20   therein, for example by phosphorylation or glycosylation of the appropriate sites, in order to obtain the functional protein. Such covalent attachments may be accomplished using known chemical or enzymatic methods.

In another embodiment of the present invention, cells and tissues may be engineered to express an endogenous gene comprising the polynucleotides of the

25   invention under the control of inducible regulatory elements, in which case the regulatory sequences of the endogenous gene may be replaced by homologous recombination. As described herein, gene targeting can be used to replace a gene's existing regulatory region with a regulatory sequence isolated from a different gene or a novel regulatory sequence synthesized by genetic engineering methods. Such regulatory sequences may be

30   comprised of promoters, enhancers, scaffold-attachment regions, negative regulatory elements, transcriptional initiation sites, regulatory protein binding sites or combinations

of said sequences. Alternatively, sequences which affect the structure or stability of the RNA or protein produced may be replaced, removed, added, or otherwise modified by targeting. These sequence include polyadenylation signals, mRNA stability elements, splice sites, leader sequences for enhancing or modifying transport or secretion properties

5   of the protein, or other sequences which alter or improve the function or stability of protein or RNA molecules.

The targeting event may be a simple insertion of the regulatory sequence, placing the gene under the control of the new regulatory sequence, e.g., inserting a new promoter or enhancer or both upstream of a gene. Alternatively, the targeting event may be a

10   simple deletion of a regulatory element, such as the deletion of a tissue-specific negative regulatory element. Alternatively, the targeting event may replace an existing element; for example, a tissue-specific enhancer can be replaced by an enhancer that has broader or different cell-type specificity than the naturally occurring elements. Here, the naturally occurring sequences are deleted and new sequences are added. In all cases, the

15   identification of the targeting event may be facilitated by the use of one or more selectable marker genes that are contiguous with the targeting DNA, allowing for the selection of cells in which the exogenous DNA has integrated into the host cell genome. The identification of the targeting event may also be facilitated by the use of one or more marker genes exhibiting the property of negative selection, such that the negatively

20   selectable marker is linked to the exogenous DNA, but configured such that the negatively selectable marker flanks the targeting sequence, and such that a correct homologous recombination event with sequences in the host cell genome does not result in the stable integration of the negatively selectable marker. Markers useful for this purpose include the Herpes Simplex Virus thymidine kinase (TK) gene or the bacterial

25   xanthine-guanine phosphoribosyl-transferase (gpt) gene.

The gene targeting or gene activation techniques which can be used in accordance with this aspect of the invention are more particularly described in U.S. Patent No. 5,272,071 to Chappel; U.S. Patent No. 5,578,461 to Sherwin et al.; International Application No. PCT/US92/09627 (WO93/09222) by Selden et al.; and International

30   Application No. PCT/US90/06436 (WO91/06667) by Skoultchi et al., each of which is incorporated by reference herein in its entirety.

4.6 POLYPEPTIDES OF THE INVENTION

The isolated polypeptides of the invention include, but are not limited to, a polypeptide comprising: the amino acid sequences set forth as any one of SEQ ID NO:740-1478 or an amino acid sequence encoded by any one of the nucleotide sequences SEQ ID NO:1-739 or the corresponding full length or mature protein. Polypeptides of the invention also include polypeptides preferably with biological or immunological activity that are encoded by: (a) a polynucleotide having any one of the nucleotide sequences set forth in SEQ ID NO:1-739 or (b) polynucleotides encoding any one of the amino acid sequences set forth as SEQ ID NO:740-1478 or (c) polynucleotides that hybridize to the complement of the polynucleotides of either (a) or (b) under stringent hybridization conditions. The invention also provides biologically active or immunologically active variants of any of the amino acid sequences set forth as SEQ ID NO:740-1478 or the corresponding full length or mature protein; and "substantial equivalents" thereof (e.g., with at least about 65%, at least about 70%, at least about 75%, at least about 80%, at least about 85%, at least about 90%, typically at least about 95%, more typically at least about 98%, or most typically at least about 99% amino acid identity) that retain biological activity. Polypeptides encoded by allelic variants may have a similar, increased, or decreased activity compared to polypeptides comprising SEQ ID NO:740-1478.

Fragments of the proteins of the present invention which are capable of exhibiting biological activity are also encompassed by the present invention. Fragments of the protein may be in linear form or they may be cyclized using known methods, for example, as described in H. U. Saragovi, et al., Bio/Technology 10, 773-778 (1992) and in R. S. McDowell, et al., J. Amer. Chem. Soc. 114, 9245-9253 (1992), both of which are incorporated herein by reference. Such fragments may be fused to carrier molecules such as immunoglobulins for many purposes, including increasing the valency of protein binding sites.

The present invention also provides both full-length and mature forms (for example, without a signal sequence or precursor sequence) of the disclosed proteins. The protein coding sequence is identified in the sequence listing by translation of the

disclosed nucleotide sequences. The mature form of such protein may be obtained by expression of a full-length polynucleotide in a suitable mammalian cell or other host cell. The sequence of the mature form of the protein is also determinable from the amino acid sequence of the full-length form. Where proteins of the present invention are membrane

5   bound, soluble forms of the proteins are also provided. In such forms, part or all of the regions causing the proteins to be membrane bound are deleted so that the proteins are fully secreted from the cell in which they are expressed.

Protein compositions of the present invention may further comprise an acceptable carrier, such as a hydrophilic, e.g., pharmaceutically acceptable, carrier.

10   The present invention further provides isolated polypeptides encoded by the nucleic acid fragments of the present invention or by degenerate variants of the nucleic acid fragments of the present invention. By "degenerate variant" is intended nucleotide fragments which differ from a nucleic acid fragment of the present invention (e.g., an ORF) by nucleotide sequence but, due to the degeneracy of the genetic code, encode an

15   identical polypeptide sequence. Preferred nucleic acid fragments of the present invention are the ORFs that encode proteins.

A variety of methodologies known in the art can be utilized to obtain any one of the isolated polypeptides or proteins of the present invention. At the simplest level, the amino acid sequence can be synthesized using commercially available peptide

20   synthesizers. The synthetically-constructed protein sequences, by virtue of sharing primary, secondary or tertiary structural and/or conformational characteristics with proteins may possess biological properties in common therewith, including protein activity. This technique is particularly useful in producing small peptides and fragments of larger polypeptides. Fragments are useful, for example, in generating antibodies

25   against the native polypeptide. Thus, they may be employed as biologically active or immunological substitutes for natural, purified proteins in screening of therapeutic compounds and in immunological processes for the development of antibodies.

The polypeptides and proteins of the present invention can alternatively be purified from cells which have been altered to express the desired polypeptide or protein.

30   As used herein, a cell is said to be altered to express a desired polypeptide or protein when the cell, through genetic manipulation, is made to produce a polypeptide or protein

which it normally does not produce or which the cell normally produces at a lower level. One skilled in the art can readily adapt procedures for introducing and expressing either recombinant or synthetic sequences into eukaryotic or prokaryotic cells in order to generate a cell which produces one of the polypeptides or proteins of the present

5   invention.

The invention also relates to methods for producing a polypeptide comprising growing a culture of host cells of the invention in a suitable culture medium, and purifying the protein from the cells or the culture in which the cells are grown. For example, the methods of the invention include a process for producing a polypeptide in

10   which a host cell containing a suitable expression vector that includes a polynucleotide of the invention is cultured under conditions that allow expression of the encoded polypeptide. The polypeptide can be recovered from the culture, conveniently from the culture medium, or from a lysate prepared from the host cells and further purified. Preferred embodiments include those in which the protein produced by such process is a

15   full length or mature form of the protein.

In an alternative method, the polypeptide or protein is purified from bacterial cells which naturally produce the polypeptide or protein. One skilled in the art can readily follow known methods for isolating polypeptides and proteins in order to obtain one of the isolated polypeptides or proteins of the present invention. These include, but

20   are not limited to, immunochromatography, HPLC, size-exclusion chromatography, ion-exchange chromatography, and immuno-affinity chromatography. See, e.g., Scopes, *Protein Purification: Principles and Practice*, Springer-Verlag (1994); Sambrook, et al., in Molecular Cloning: *A Laboratory Manual*; Ausubel et al., *Current Protocols in Molecular Biology*. Polypeptide fragments that retain biological/immunological activity

25   include fragments comprising greater than about 100 amino acids, or greater than about 200 amino acids, and fragments that encode specific protein domains.

The purified polypeptides can be used in *in vitro* binding assays which are well known in the art to identify molecules which bind to the polypeptides. These molecules include but are not limited to, for e.g., small molecules, molecules from combinatorial

30   libraries, antibodies or other proteins. The molecules identified in the binding assay are then tested for antagonist or agonist activity in *in vivo* tissue culture or animal models

that are well known in the art. In brief, the molecules are titrated into a plurality of cell cultures or animals and then tested for either cell/animal death or prolonged survival of the animal/cells.

In addition, the peptides of the invention or molecules capable of binding to the peptides may be complexed with toxins, e.g., ricin or cholera, or with other compounds that are toxic to cells. The toxin-binding molecule complex is then targeted to a tumor or other cell by the specificity of the binding molecule for SEQ ID NO:740-1478.

The protein of the invention may also be expressed as a product of transgenic animals, e.g., as a component of the milk of transgenic cows, goats, pigs, or sheep which are characterized by somatic or germ cells containing a nucleotide sequence encoding the protein.

The proteins provided herein also include proteins characterized by amino acid sequences similar to those of purified proteins but into which modification are naturally provided or deliberately engineered. For example, modifications, in the peptide or DNA sequence, can be made by those skilled in the art using known techniques. Modifications of interest in the protein sequences may include the alteration, substitution, replacement, insertion or deletion of a selected amino acid residue in the coding sequence. For example, one or more of the cysteine residues may be deleted or replaced with another amino acid to alter the conformation of the molecule. Techniques for such alteration, substitution, replacement, insertion or deletion are well known to those skilled in the art (see, e.g., U.S. Pat. No. 4,518,584). Preferably, such alteration, substitution, replacement, insertion or deletion retains the desired activity of the protein. Regions of the protein that are important for the protein function can be determined by various methods known in the art including the alanine-scanning method which involved systematic substitution of single or strings of amino acids with alanine, followed by testing the resulting alanine-containing variant for biological activity. This type of analysis determines the importance of the substituted amino acid(s) in biological activity. Regions of the protein that are important for protein function may be determined by the eMATRIX program.

Other fragments and derivatives of the sequences of proteins which would be expected to retain protein activity in whole or in part and are useful for screening or other

immunological methodologies may also be easily made by those skilled in the art given the disclosures herein. Such modifications are encompassed by the present invention.

The protein may also be produced by operably linking the isolated polynucleotide of the invention to suitable control sequences in one or more insect expression vectors,

5   and employing an insect expression system. Materials and methods for baculovirus/insect cell expression systems are commercially available in kit form from, e.g., Invitrogen, San Diego, Calif., U.S.A. (the MaxBat™ kit), and such methods are well known in the art, as described in Summers and Smith, Texas Agricultural Experiment Station Bulletin No. 1555 (1987), incorporated herein by reference. As used herein, an

10   insect cell capable of expressing a polynucleotide of the present invention is "transformed."

The protein of the invention may be prepared by culturing transformed host cells under culture conditions suitable to express the recombinant protein. The resulting expressed protein may then be purified from such culture (i.e., from culture medium or

15   cell extracts) using known purification processes, such as gel filtration and ion exchange chromatography. The purification of the protein may also include an affinity column containing agents which will bind to the protein; one or more column steps over such affinity resins as concanavalin A-agarose, heparin-toyopearl™ or Cibacrom blue 3GA Sepharose™; one or more steps involving hydrophobic interaction chromatography using

20   such resins as phenyl ether, butyl ether, or propyl ether; or immunoaffinity chromatography.

Alternatively, the protein of the invention may also be expressed in a form which will facilitate purification. For example, it may be expressed as a fusion protein, such as those of maltose binding protein (MBP), glutathione-S-transferase (GST) or thioredoxin

25   (TRX), or as a His tag. Kits for expression and purification of such fusion proteins are commercially available from New England BioLab (Beverly, Mass.), Pharmacia (Piscataway, N.J.) and Invitrogen, respectively. The protein can also be tagged with an epitope and subsequently purified by using a specific antibody directed to such epitope. One such epitope ("FLAG®") is commercially available from Kodak (New Haven,

30   Conn.).

Finally, one or more reverse-phase high performance liquid chromatography (RP-HPLC) steps employing hydrophobic RP-HPLC media, *e.g.*, silica gel having pendant methyl or other aliphatic groups, can be employed to further purify the protein. Some or all of the foregoing purification steps, in various combinations, can also be employed to provide a substantially homogeneous isolated recombinant protein. The protein thus purified is substantially free of other mammalian proteins and is defined in accordance with the present invention as an "isolated protein."

The polypeptides of the invention include analogs (variants). This embraces fragments, as well as peptides in which one or more amino acids has been deleted, inserted, or substituted. Also, analogs of the polypeptides of the invention embrace fusions of the polypeptides or modifications of the polypeptides of the invention, wherein the polypeptide or analog is fused to another moiety or moieties, e.g., targeting moiety or another therapeutic agent. Such analogs may exhibit improved properties such as activity and/or stability. Examples of moieties which may be fused to the polypeptide or an analog include, for example, targeting moieties which provide for the delivery of polypeptide to pancreatic cells, e.g., antibodies to pancreatic cells, antibodies to immune cells such as T-cells, monocytes, dendritic cells, granulocytes, etc., as well as receptor and ligands expressed on pancreatic or immune cells. Other moieties which may be fused to the polypeptide include therapeutic agents which are used for treatment, for example, immunosuppressive drugs such as cyclosporin, SK506, azathioprine, CD3 antibodies and steroids. Also, polypeptides may be fused to immune modulators, and other cytokines such as alpha or beta interferon.

4.6.1 DETERMINING POLYPEPTIDE AND POLYNUCLEOTIDE IDENTITY AND SIMILARITY

Preferred identity and/or similarity are designed to give the largest match between the sequences tested. Methods to determine identity and similarity are codified in computer programs including, but are not limited to, the GCG program package, including GAP (Devereux, J., et al., Nucleic Acids Research 12(1):387 (1984); Genetics Computer Group, University of Wisconsin, Madison, WI), BLASTP, BLASTN, BLASTX, FASTA (Altschul, S.F. et al., J. Molec. Biol. 215:403-410 (1990), PSI-BLAST

(Altschul S.F. et al., Nucleic Acids Res. vol. 25, pp. 3389-3402, herein incorporated by

reference), eMatrix software (Wu et al., J. Comp. Biol., Vol. 6, pp. 219-235 (1999),

herein incorporated by reference), eMotif software (Nevill-Manning et al, ISMB-97, Vol.

4, pp. 202-209, herein incorporated by reference), pFam software (Sonnhammer et al.,

5   Nucleic Acids Res., Vol. 26(1), pp. 320-322 (1998), herein incorporated by reference)

and the Kyte-Doolittle hydrophobocity prediction algorithm (J. Mol Biol, 157, pp. 105-31

(1982), incorporated herein by reference). The BLAST programs are publicly available

from the National Center for Biotechnology Information (NCBI) and other sources

(BLAST Manual, Altschul, S., et al. NCB NLM NIH Bethesda, MD 20894; Altschul, S.,

10   et al., J. Mol. Biol. 215:403-410 (1990).

4.7 CHIMERIC AND FUSION PROTEINS

       The invention also provides chimeric or fusion proteins. As used herein, a

"chimeric protein" or "fusion protein" comprises a polypeptide of the invention

operatively linked to another polypeptide. Within a fusion protein the polypeptide

15   according to the invention can correspond to all or a portion of a protein according to the

invention. In one embodiment, a fusion protein comprises at least one biologically active

portion of a protein according to the invention. In another embodiment, a fusion protein

comprises at least two biologically active portions of a protein according to the

invention. Within the fusion protein, the term "operatively linked" is intended to indicate

20   that the polypeptide according to the invention and the other polypeptide are fused

in-frame to each other. The polypeptide can be fused to the N-terminus or C-terminus.

       For example, in one embodiment a fusion protein comprises a polypeptide

according to the invention operably linked to the extracellular domain of a second

protein.

25   In another embodiment, the fusion protein is a GST-fusion protein in which the

polypeptide sequences of the invention are fused to the C-terminus of the GST (i.e.,

glutathione S-transferase) sequences.

       In another embodiment, the fusion protein is an immunoglobulin fusion protein in

which the polypeptide sequences according to the invention comprises one or more

30   domains are fused to sequences derived from a member of the immunoglobulin protein

family. The immunoglobulin fusion proteins of the invention can be incorporated into

pharmaceutical compositions and administered to a subject to inhibit an interaction between a ligand and a protein of the invention on the surface of a cell, to thereby suppress signal transduction *in vivo*. The immunoglobulin fusion proteins can be used to affect the bioavailability of a cognate ligand. Inhibition of the ligand/protein interaction

5   may be useful therapeutically for both the treatment of proliferative and differentiative disorders, *e.g.*, cancer as well as modulating (*e.g.*, promoting or inhibiting) cell survival. Moreover, the immunoglobulin fusion proteins of the invention can be used as immunogens to produce antibodies in a subject, to purify ligands, and in screening assays to identify molecules that inhibit the interaction of a polypeptide of the invention with a

10   ligand.

A chimeric or fusion protein of the invention can be produced by standard recombinant DNA techniques. For example, DNA fragments coding for the different polypeptide sequences are ligated together in-frame in accordance with conventional techniques, *e.g.*, by employing blunt-ended or stagger-ended termini for ligation,

15   restriction enzyme digestion to provide for appropriate termini, filling-in of cohesive ends as appropriate, alkaline phosphatase treatment to avoid undesirable joining, and enzymatic ligation. In another embodiment, the fusion gene can be synthesized by conventional techniques including automated DNA synthesizers. Alternatively, PCR amplification of gene fragments can be carried out using anchor primers that give rise to

20   complementary overhangs between two consecutive gene fragments that can subsequently be annealed and reamplified to generate a chimeric gene sequence (see, for example, Ausubel et al. (eds.) CURRENT PROTOCOLS IN MOLECULAR BIOLOGY, John Wiley & Sons, 1992). Moreover, many expression vectors are commercially available that already encode a fusion moiety (*e.g.*, a GST polypeptide). A nucleic acid encoding

25   a polypeptide of the invention can be cloned into such an expression vector such that the fusion moiety is linked in-frame to the protein of the invention.

4.8 GENE THERAPY

Mutations in the polynucleotides of the invention gene may result in loss of

30   normal function of the encoded protein. The invention thus provides gene therapy to restore normal activity of the polypeptides of the invention; or to treat disease states

involving polypeptides of the invention. Delivery of a functional gene encoding polypeptides of the invention to appropriate cells is effected *ex vivo*, *in situ*, or *in vivo* by use of vectors, and more particularly viral vectors (e.g., adenovirus, adeno-associated virus, or a retrovirus), or *ex vivo* by use of physical DNA transfer methods (e.g.,

5   liposomes or chemical treatments). See, for example, Anderson, Nature, supplement to vol. 392, no. 6679, pp.25-20 (1998). For additional reviews of gene therapy technology see Friedmann, Science, 244: 1275-1281 (1989); Verma, Scientific American: 68-84 (1990); and Miller, Nature, 357: 455-460 (1992). Introduction of any one of the nucleotides of the present invention or a gene encoding the polypeptides of the present

10   invention can also be accomplished with extrachromosomal substrates (transient expression) or artificial chromosomes (stable expression). Cells may also be cultured *ex vivo* in the presence of proteins of the present invention in order to proliferate or to produce a desired effect on or activity in such cells. Treated cells can then be introduced *in vivo* for therapeutic purposes. Alternatively, it is contemplated that in other human

15   disease states, preventing the expression of or inhibiting the activity of polypeptides of the invention will be useful in treating the disease states. It is contemplated that antisense therapy or gene therapy could be applied to negatively regulate the expression of polypeptides of the invention.

       Other methods inhibiting expression of a protein include the introduction of

20   antisense molecules to the nucleic acids of the present invention, their complements, or their translated RNA sequences, by methods known in the art. Further, the polypeptides of the present invention can be inhibited by using targeted deletion methods, or the insertion of a negative regulatory element such as a silencer, which is tissue specific.

       The present invention still further provides cells genetically engineered *in vivo* to

25   express the polynucleotides of the invention, wherein such polynucleotides are in operative association with a regulatory sequence heterologous to the host cell which drives expression of the polynucleotides in the cell. These methods can be used to increase or decrease the expression of the polynucleotides of the present invention.

       Knowledge of DNA sequences provided by the invention allows for modification of

30   cells to permit, increase, or decrease, expression of endogenous polypeptide. Cells can be modified (e.g., by homologous recombination) to provide increased polypeptide expression

by replacing, in whole or in part, the naturally occurring promoter with all or part of a heterologous promoter so that the cells express the protein at higher levels. The heterologous promoter is inserted in such a manner that it is operatively linked to the desired protein encoding sequences. See, for example, PCT International Publication No. WO 94/12650,

5   PCT International Publication No. WO 92/20808, and PCT International Publication No. WO 91/09955. It is also contemplated that, in addition to heterologous promoter DNA, amplifiable marker DNA (e.g., ada, dhfr, and the multifunctional CAD gene which encodes carbamyl phosphate synthase, aspartate transcarbamylase, and dihydroorotase) and/or intron DNA may be inserted along with the heterologous promoter DNA. If linked to the desired

10   protein coding sequence, amplification of the marker DNA by standard selection methods results in co-amplification of the desired protein coding sequences in the cells.

In another embodiment of the present invention, cells and tissues may be engineered to express an endogenous gene comprising the polynucleotides of the invention under the control of inducible regulatory elements, in which case the regulatory sequences of the

15   endogenous gene may be replaced by homologous recombination. As described herein, gene targeting can be used to replace a gene's existing regulatory region with a regulatory sequence isolated from a different gene or a novel regulatory sequence synthesized by genetic engineering methods. Such regulatory sequences may be comprised of promoters, enhancers, scaffold-attachment regions, negative regulatory elements, transcriptional

20   initiation sites, regulatory protein binding sites or combinations of said sequences. Alternatively, sequences which affect the structure or stability of the RNA or protein produced may be replaced, removed, added, or otherwise modified by targeting. These sequences include polyadenylation signals, mRNA stability elements, splice sites, leader sequences for enhancing or modifying transport or secretion properties of the protein, or

25   other sequences which alter or improve the function or stability of protein or RNA molecules.

The targeting event may be a simple insertion of the regulatory sequence, placing the gene under the control of the new regulatory sequence, *e.g.*, inserting a new promoter or enhancer or both upstream of a gene. Alternatively, the targeting event may be a simple

30   deletion of a regulatory element, such as the deletion of a tissue-specific negative regulatory element. Alternatively, the targeting event may replace an existing element; for example, a

tissue-specific enhancer can be replaced by an enhancer that has broader or different cell-type specificity than the naturally occurring elements. Here, the naturally occurring sequences are deleted and new sequences are added. In all cases, the identification of the targeting event may be facilitated by the use of one or more selectable marker genes that are

5   contiguous with the targeting DNA, allowing for the selection of cells in which the exogenous DNA has integrated into the cell genome. The identification of the targeting event may also be facilitated by the use of one or more marker genes exhibiting the property of negative selection, such that the negatively selectable marker is linked to the exogenous DNA, but configured such that the negatively selectable marker flanks the targeting

10   sequence, and such that a correct homologous recombination event with sequences in the host cell genome does not result in the stable integration of the negatively selectable marker. Markers useful for this purpose include the Herpes Simplex Virus thymidine kinase (TK) gene or the bacterial xanthine-guanine phosphoribosyl-transferase (gpt) gene.

The gene targeting or gene activation techniques which can be used in accordance

15   with this aspect of the invention are more particularly described in U.S. Patent No. 5,272,071 to Chappel; U.S. Patent No. 5,578,461 to Sherwin et al.; International Application No. PCT/US92/09627 (WO93/09222) by Selden et al.; and International Application No. PCT/US90/06436 (WO91/06667) by Skoultchi et al., each of which is incorporated by reference herein in its entirety.

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4.9 TRANSGENIC ANIMALS

In preferred methods to determine biological functions of the polypeptides of the invention in vivo, one or more genes provided by the invention are either over expressed or inactivated in the germ line of animals using homologous recombination [Capecchi,

25   Science 244:1288-1292 (1989)]. Animals in which the gene is over expressed, under the regulatory control of exogenous or endogenous promoter elements, are known as transgenic animals. Animals in which an endogenous gene has been inactivated by homologous recombination are referred to as "knockout" animals. Knockout animals, preferably non-human mammals, can be prepared as described in U.S. Patent No.

30   5,557,032, incorporated herein by reference. Transgenic animals are useful to determine the roles polypeptides of the invention play in biological processes, and preferably in

disease states. Transgenic animals are useful as model systems to identify compounds that modulate lipid metabolism. Transgenic animals, preferably non-human mammals, are produced using methods as described in U.S. Patent No 5,489,743 and PCT Publication No. WO94/28122, incorporated herein by reference.

5   Transgenic animals can be prepared wherein all or part of a promoter of the polynucleotides of the invention is either activated or inactivated to alter the level of expression of the polypeptides of the invention. Inactivation can be carried out using homologous recombination methods described above. Activation can be achieved by supplementing or even replacing the homologous promoter to provide for increased

10   protein expression. The homologous promoter can be supplemented by insertion of one or more heterologous enhancer elements known to confer promoter activation in a particular tissue.

The polynucleotides of the present invention also make possible the development, through, e.g., homologous recombination or knock out strategies, of animals that fail to

15   express polypeptides of the invention or that express a variant polypeptide. Such animals are useful as models for studying the *in vivo* activities of polypeptide as well as for studying modulators of the polypeptides of the invention.

In preferred methods to determine biological functions of the polypeptides of the invention *in vivo*, one or more genes provided by the invention are either over expressed

20   or inactivated in the germ line of animals using homologous recombination [Capecchi, Science 244:1288-1292 (1989)]. Animals in which the gene is over expressed, under the regulatory control of exogenous or endogenous promoter elements, are known as transgenic animals. Animals in which an endogenous gene has been inactivated by homologous recombination are referred to as "knockout" animals. Knockout animals,

25   preferably non-human mammals, can be prepared as described in U.S. Patent No. 5,557,032, incorporated herein by reference. Transgenic animals are useful to determine the roles polypeptides of the invention play in biological processes, and preferably in disease states. Transgenic animals are useful as model systems to identify compounds that modulate lipid metabolism. Transgenic animals, preferably non-human mammals,

30   are produced using methods as described in U.S. Patent No 5,489,743 and PCT Publication No. WO94/28122, incorporated herein by reference.

Transgenic animals can be prepared wherein all or part of the polynucleotides of the invention promoter is either activated or inactivated to alter the level of expression of the polypeptides of the invention. Inactivation can be carried out using homologous recombination methods described above. Activation can be achieved by supplementing or

5   even replacing the homologous promoter to provide for increased protein expression. The homologous promoter can be supplemented by insertion of one or more heterologous enhancer elements known to confer promoter activation in a particular tissue.

4.10 USES AND BIOLOGICAL ACTIVITY

10   The polynucleotides and proteins of the present invention are expected to exhibit one or more of the uses or biological activities (including those associated with assays cited herein) identified herein. Uses or activities described for proteins of the present invention may be provided by administration or use of such proteins or of polynucleotides encoding such proteins (such as, for example, in gene therapies or

15   vectors suitable for introduction of DNA). The mechanism underlying the particular condition or pathology will dictate whether the polypeptides of the invention, the polynucleotides of the invention or modulators (activators or inhibitors) thereof would be beneficial to the subject in need of treatment. Thus, "therapeutic compositions of the invention" include compositions comprising isolated polynucleotides (including

20   recombinant DNA molecules, cloned genes and degenerate variants thereof) or polypeptides of the invention (including full length protein, mature protein and truncations or domains thereof), or compounds and other substances that modulate the overall activity of the target gene products, either at the level of target gene/protein expression or target protein activity. Such modulators include polypeptides, analogs,

25   (variants), including fragments and fusion proteins, antibodies and other binding proteins; chemical compounds that directly or indirectly activate or inhibit the polypeptides of the invention (identified, e.g., via drug screening assays as described herein); antisense polynucleotides and polynucleotides suitable for triple helix formation; and in particular antibodies or other binding partners that specifically recognize one or more epitopes of

30   the polypeptides of the invention.

The polypeptides of the present invention may likewise be involved in cellular activation or in one of the other physiological pathways described herein.

4.10.1 RESEARCH USES AND UTILITIES

5   The polynucleotides provided by the present invention can be used by the research community for various purposes. The polynucleotides can be used to express recombinant protein for analysis, characterization or therapeutic use; as markers for tissues in which the corresponding protein is preferentially expressed (either constitutively or at a particular stage of tissue differentiation or development or in disease

10   states); as molecular weight markers on gels; as chromosome markers or tags (when labeled) to identify chromosomes or to map related gene positions; to compare with endogenous DNA sequences in patients to identify potential genetic disorders; as probes to hybridize and thus discover novel, related DNA sequences; as a source of information to derive PCR primers for genetic fingerprinting; as a probe to "subtract-out" known

15   sequences in the process of discovering other novel polynucleotides; for selecting and making oligomers for attachment to a "gene chip" or other support, including for examination of expression patterns; to raise anti-protein antibodies using DNA immunization techniques; and as an antigen to raise anti-DNA antibodies or elicit another immune response. Where the polynucleotide encodes a protein which binds or

20   potentially binds to another protein (such as, for example, in a receptor-ligand interaction), the polynucleotide can also be used in interaction trap assays (such as, for example, that described in Gyuris et al., Cell 75:791-803 (1993)) to identify polynucleotides encoding the other protein with which binding occurs or to identify inhibitors of the binding interaction.

25   The polypeptides provided by the present invention can similarly be used in assays to determine biological activity, including in a panel of multiple proteins for high-throughput screening; to raise antibodies or to elicit another immune response; as a reagent (including the labeled reagent) in assays designed to quantitatively determine levels of the protein (or its receptor) in biological fluids; as markers for tissues in which

30   the corresponding polypeptide is preferentially expressed (either constitutively or at a particular stage of tissue differentiation or development or in a disease state); and, of

course, to isolate correlative receptors or ligands. Proteins involved in these binding interactions can also be used to screen for peptide or small molecule inhibitors or ago: of the binding interaction.

Any or all of these research utilities are capable of being developed into reager

5   grade or kit format for commercialization as research products.

Methods for performing the uses listed above are well known to those skilled ir the art. References disclosing such methods include without limitation "Molecular Cloning: A Laboratory Manual", 2d ed., Cold Spring Harbor Laboratory Press, Sambrook, J., E. F. Fritsch and T. Maniatis eds., 1989, and "Methods in Enzymology:

10   Guide to Molecular Cloning Techniques", Academic Press, Berger, S. L. and A. R. Kimmel eds., 1987.

4.10.2 NUTRITIONAL USES

Polynucleotides and polypeptides of the present invention can also be used as

15   nutritional sources or supplements. Such uses include without limitation use as a protein or amino acid supplement, use as a carbon source, use as a nitrogen source and use as a source of carbohydrate. In such cases the polypeptide or polynucleotide of the invention can be added to the feed of a particular organism or can be administered as a separate solid or liquid preparation, such as in the form of powder, pills, solutions, suspensions or capsules. In the

20   case of microorganisms, the polypeptide or polynucleotide of the invention can be added to the medium in or on which the microorganism is cultured.

4.10.3 CYTOKINE AND CELL PROLIFERATION/DIFFERENTIATION ACTIVITY

25   A polypeptide of the present invention may exhibit activity relating to cytokine, cell proliferation (either inducing or inhibiting) or cell differentiation (either inducing or inhibiting) activity or may induce production of other cytokines in certain cell populations. A polynucleotide of the invention can encode a polypeptide exhibiting such attributes. Many protein factors discovered to date, including all known cytokines, have

30   exhibited activity in one or more factor-dependent cell proliferation assays, and hence the assays serve as a convenient confirmation of cytokine activity. The activity of therapeutic

compositions of the present invention is evidenced by any one of a number of routine

factor dependent cell proliferation assays for cell lines including, without limitation, 32D,

DA2, DA1G, T10, B9, B9/11, BaF3, MC9/G, M+(preB M+), 2E8, RB5, DA1, 123,

T1165, HT2, CTLL2, TF-1, Mo7e, CMK, HUVEC, and Caco. Therapeutic compositions

5   of the invention can be used in the following:

Assays for T-cell or thymocyte proliferation include without limitation those

described in: Current Protocols in Immunology, Ed by J. E. Coligan, A. M. Kruisbeek, D.

H. Margulies, E. M. Shevach, W. Strober, Pub. Greene Publishing Associates and

Wiley-Interscience (Chapter 3, *In Vitro* assays for Mouse Lymphocyte Function 3.1-3.19;

10   Chapter 7, Immunologic studies in Humans); Takai et al., J. Immunol. 137:3494-3500,

1986; Bertagnolli et al., J. Immunol. 145:1706-1712, 1990; Bertagnolli et al., Cellular

Immunology 133:327-341, 1991; Bertagnolli, et al., I. Immunol. 149:3778-3783, 1992;

Bowman et al., I. Immunol. 152:1756-1761, 1994.

Assays for cytokine production and/or proliferation of spleen cells, lymph node

15   cells or thymocytes include, without limitation, those described in: Polyclonal T cell

stimulation, Kruisbeek, A. M. and Shevach, E. M. In Current Protocols in Immunology.

J. E. e.a. Coligan eds. Vol 1 pp. 3.12.1-3.12.14, John Wiley and Sons, Toronto. 1994; and

Measurement of mouse and human interleukin-γ, Schreiber, R. D. In Current Protocols in

Immunology. J. E. e.a. Coligan eds. Vol 1 pp. 6.8.1-6.8.8, John Wiley and Sons, Toronto.

20   1994.

Assays for proliferation and differentiation of hematopoietic and lymphopoietic

cells include, without limitation, those described in: Measurement of Human and Murine

Interleukin 2 and Interleukin 4, Bottomly, K., Davis, L. S. and Lipsky, P. E. In Current

Protocols in Immunology. J..E. e.a. Coligan eds. Vol 1 pp. 6.3.1-6.3.12, John Wiley and

25   Sons, Toronto. 1991; deVries et al., J. Exp. Med. 173:1205-1211, 1991; Moreau et al.,

Nature 336:690-692, 1988; Greenberger et al., Proc. Natl. Acad. Sci. U.S.A.

80:2931-2938, 1983; Measurement of mouse and human interleukin 6--Nordan, R. In

Current Protocols in Immunology. J. E. Coligan eds. Vol 1 pp. 6.6.1-6.6.5, John Wiley

and Sons, Toronto. 1991; Smith et al., Proc. Natl. Aced. Sci. U.S.A. 83:1857-1861, 1986;

30.   Measurement of human Interleukin 11--Bennett, F., Giannotti, J., Clark, S. C. and Turner,

K. J. In Current Protocols in Immunology. J. E. Coligan eds. Vol 1 pp. 6.15.1 John

Wiley and Sons, Toronto. 1991; Measurement of mouse and human Interleukin 9--Ciarletta, A., Giannotti, J., Clark, S. C. and Turner, K. J. In Current Protocols in Immunology. J. E. Coligan eds. Vol 1 pp. 6.13.1, John Wiley and Sons, Toronto. 1991.

Assays for T-cell clone responses to antigens (which will identify, among others,
5   proteins that affect APC-T cell interactions as well as direct T-cell effects by measuring proliferation and cytokine production) include, without limitation, those described in: Current Protocols in Immunology, Ed by J. E. Coligan, A. M. Kruisbeek, D. H. Margulies, E. M. Shevach, W Strober, Pub. Greene Publishing Associates and Wiley-Interscience (Chapter 3, *In Vitro* assays for Mouse Lymphocyte Function; Chapter
10   6, Cytokines and their cellular receptors; Chapter 7, Immunologic studies in Humans); Weinberger et al., Proc. Natl. Acad. Sci. USA 77:6091-6095, 1980; Weinberger et al., Eur. J. Immun. 11:405-411, 1981; Takai et al., J. Immunol. 137:3494-3500, 1986; Takai et al., J. Immunol. 140:508-512, 1988.

15   **4.10.4 STEM CELL GROWTH FACTOR ACTIVITY**

A polypeptide of the present invention may exhibit stem cell growth factor activity and be involved in the proliferation, differentiation and survival of pluripotent and totipotent stem cells including primordial germ cells, embryonic stem cells, hematopoietic stem cells and/or germ line stem cells. Administration of the polypeptide
20   of the invention to stem cells *in vivo* or *ex vivo* is expected to maintain and expand cell populations in a totipotential or pluripotential state which would be useful for re-engineering damaged or diseased tissues, transplantation, manufacture of bio-pharmaceuticals and the development of bio-sensors. The ability to produce large quantities of human cells has important working applications for the production of human
25   proteins which currently must be obtained from non-human sources or donors, implantation of cells to treat diseases such as Parkinson's, Alzheimer's and other neurodegenerative diseases; tissues for grafting such as bone marrow, skin, cartilage, tendons, bone, muscle (including cardiac muscle), blood vessels, cornea, neural cells, gastrointestinal cells and others; and organs for transplantation such as kidney, liver,
30   pancreas (including islet cells), heart and lung.

It is contemplated that multiple different exogenous growth factors and/or cytokines may be administered in combination with the polypeptide of the invention to achieve the desired effect, including any of the growth factors listed herein, other stem cell maintenance factors, and specifically including stem cell factor (SCF), leukemia

5   inhibitory factor (LIF), Flt-3 ligand (Flt-3L), any of the interleukins, recombinant soluble IL-6 receptor fused to IL-6, macrophage inflammatory protein 1-alpha (MIP-1-alpha), G-CSF, GM-CSF, thrombopoietin (TPO), platelet factor 4 (PF-4), platelet-derived growth factor (PDGF), neural growth factors and basic fibroblast growth factor (bFGF).

Since totipotent stem cells can give rise to virtually any mature cell type,

10   expansion of these cells in culture will facilitate the production of large quantities of mature cells. Techniques for culturing stem cells are known in the art and administration of polypeptides of the invention, optionally with other growth factors and/or cytokines, is expected to enhance the survival and proliferation of the stem cell populations. This can be accomplished by direct administration of the polypeptide of the invention to the

15   culture medium. Alternatively, stroma cells transfected with a polynucleotide that encodes for the polypeptide of the invention can be used as a feeder layer for the stem cell populations in culture or in vivo. Stromal support cells for feeder layers may include embryonic bone marrow fibroblasts, bone marrow stromal cells, fetal liver cells, or cultured embryonic fibroblasts (see U.S. Patent No. 5,690,926).

20   Stem cells themselves can be transfected with a polynucleotide of the invention to induce autocrine expression of the polypeptide of the invention. This will allow for generation of undifferentiated totipotential/pluripotential stem cell lines that are useful as is or that can then be differentiated into the desired mature cell types. These stable cell lines can also serve as a source of undifferentiated totipotential/pluripotential mRNA to

25   create cDNA libraries and templates for polymerase chain reaction experiments. These studies would allow for the isolation and identification of differentially expressed genes in stem cell populations that regulate stem cell proliferation and/or maintenance.

Expansion and maintenance of totipotent stem cell populations will be useful in the treatment of many pathological conditions. For example, polypeptides of the present

30   invention may be used to manipulate stem cells in culture to give rise to neuroepithelial cells that can be used to augment or replace cells damaged by illness, autoimmune

disease, accidental damage or genetic disorders. The polypeptide of the invention may be useful for inducing the proliferation of neural cells and for the regeneration of nerve and brain tissue, i.e. for the treatment of central and peripheral nervous system diseases and neuropathies, as well as mechanical and traumatic disorders which involve degeneration,

5   death or trauma to neural cells or nerve tissue. In addition, the expanded stem cell populations can also be genetically altered for gene therapy purposes and to decrease host rejection of replacement tissues after grafting or implantation.

Expression of the polypeptide of the invention and its effect on stem cells can also be manipulated to achieve controlled differentiation of the stem cells into more

10   differentiated cell types. A broadly applicable method of obtaining pure populations of a specific differentiated cell type from undifferentiated stem cell populations involves the use of a cell-type specific promoter driving a selectable marker. The selectable marker allows only cells of the desired type to survive. For example, stem cells can be induced to differentiate into cardiomyocytes (Wobus et al., Differentiation, 48: 173-182, (1991);

15   Klug et al., J. Clin. Invest., 98(1): 216-224, (1998)) or skeletal muscle cells (Browder, L. W. In: *Principles of Tissue Engineering eds.* Lanza et al., Academic Press (1997)). Alternatively, directed differentiation of stem cells can be accomplished by culturing the stem cells in the presence of a differentiation factor such as retinoic acid and an antagonist of the polypeptide of the invention which would inhibit the effects of

20   endogenous stem cell factor activity and allow differentiation to proceed.

In vitro cultures of stem cells can be used to determine if the polypeptide of the invention exhibits stem cell growth factor activity. Stem cells are isolated from any one of various cell sources (including hematopoietic stem cells and embryonic stem cells) and cultured on a feeder layer, as described by Thompson et al. Proc. Natl. Acad. Sci, U.S.A.,

25   92: 7844-7848 (1995), in the presence of the polypeptide of the invention alone or in combination with other growth factors or cytokines. The ability of the polypeptide of the invention to induce stem cells proliferation is determined by colony formation on semi-solid support e.g. as described by Bernstein et al., Blood, 77: 2316-2321 (1991).

30   **4.10.5 HEMATOPOIESIS REGULATING ACTIVITY**

A polypeptide of the present invention may be involved in regulation of hematopoiesis and, consequently, in the treatment of myeloid or lymphoid cell disorders. Even marginal biological activity in support of colony forming cells or of factor-dependent cell lines indicates involvement in regulating hematopoiesis, e.g. in

5   supporting the growth and proliferation of erythroid progenitor cells alone or in combination with other cytokines, thereby indicating utility, for example, in treating various anemias or for use in conjunction with irradiation/chemotherapy to stimulate the production of erythroid precursors and/or erythroid cells; in supporting the growth and proliferation of myeloid cells such as granulocytes and monocytes/macrophages (i.e.,

10   traditional CSF activity) useful, for example, in conjunction with chemotherapy to prevent or treat consequent myelo-suppression; in supporting the growth and proliferation of megakaryocytes and consequently of platelets thereby allowing prevention or treatment of various platelet disorders such as thrombocytopenia, and generally for use in place of or complimentary to platelet transfusions; and/or in supporting the growth and

15   proliferation of hematopoietic stem cells which are capable of maturing to any and all of the above-mentioned hematopoietic cells and therefore find therapeutic utility in various stem cell disorders (such as those usually treated with transplantation, including, without limitation, aplastic anemia and paroxysmal nocturnal hemoglobinuria), as well as in repopulating the stem cell compartment post irradiation/chemotherapy, either *in-vivo* or

20   *ex-vivo* (i.e., in conjunction with bone marrow transplantation or with peripheral progenitor cell transplantation (homologous or heterologous)) as normal cells or genetically manipulated for gene therapy.

Therapeutic compositions of the invention can be used in the following:

Suitable assays for proliferation and differentiation of various hematopoietic lines

25   are cited above.

Assays for embryonic stem cell differentiation (which will identify, among others, proteins that influence embryonic differentiation hematopoiesis) include, without limitation, those described in: Johansson et al. Cellular Biology 15:141-151, 1995; Keller et al., Molecular and Cellular Biology 13:473-486, 1993; McClanahan et al., Blood

30   81:2903-2915, 1993.

52

Assays for stem cell survival and differentiation (which will identify, among others, proteins that regulate lympho-hematopoiesis) include, without limitation, those described in: Methylcellulose colony forming assays, Freshney, M. G. In Culture of Hematopoietic Cells. R. I. Freshney, et al. eds. Vol pp. 265-268, Wiley-Liss, Inc., New York, N.Y. 1994; Hirayama et al., Proc. Natl. Acad. Sci. USA 89:5907-5911, 1992; Primitive hematopoietic colony forming cells with high proliferative potential, McNiece, I. K. and Briddell, R. A. In Culture of Hematopoietic Cells. R. I. Freshney, et al. eds. Vol pp. 23-39, Wiley-Liss, Inc., New York, N.Y. 1994; Neben et al., Experimental Hematology 22:353-359, 1994; Cobblestone area forming cell assay, Ploemacher, R. E. In Culture of Hematopoietic Cells. R. I. Freshney, et al. eds. Vol pp. 1-21, Wiley-Liss, Inc., New York, N.Y. 1994; Long term bone marrow cultures in the presence of stromal cells, Spooncer, E., Dexter, M. and Allen, T. In Culture of Hematopoietic Cells. R. I. Freshney, et al. eds. Vol pp. 163-179, Wiley-Liss, Inc., New York, N.Y. 1994; Long term culture initiating cell assay, Sutherland, H. J. In Culture of Hematopoietic Cells. R. I. Freshney, et al. eds. Vol pp. 139-162, Wiley-Liss, Inc., New York, N.Y. 1994.

4.10.6 TISSUE GROWTH ACTIVITY

A polypeptide of the present invention also may be involved in bone, cartilage, tendon, ligament and/or nerve tissue growth or regeneration, as well as in wound healing and tissue repair and replacement, and in healing of burns, incisions and ulcers.

A polypeptide of the present invention which induces cartilage and/or bone growth in circumstances where bone is not normally formed, has application in the healing of bone fractures and cartilage damage or defects in humans and other animals. Compositions of a polypeptide, antibody, binding partner, or other modulator of the invention may have prophylactic use in closed as well as open fracture reduction and also in the improved fixation of artificial joints. De novo bone formation induced by an osteogenic agent contributes to the repair of congenital, trauma induced, or oncologic resection induced craniofacial defects, and also is useful in cosmetic plastic surgery.

A polypeptide of this invention may also be involved in attracting bone-forming cells, stimulating growth of bone-forming cells, or inducing differentiation of progenitors of bone-forming cells. Treatment of osteoporosis, osteoarthritis, bone degenerative

disorders, or periodontal disease, such as through stimulation of bone and/or cartilage

repair or by blocking inflammation or processes of tissue destruction (collagenase

activity, osteoclast activity, etc.) mediated by inflammatory processes may also be

possible using the composition of the invention.

5   Another category of tissue regeneration activity that may involve the polypeptide

of the present invention is tendon/ligament formation. Induction of tendon/ligament-like

tissue or other tissue formation in circumstances where such tissue is not normally

formed, has application in the healing of tendon or ligament tears, deformities and other

tendon or ligament defects in humans and other animals. Such a preparation employing a

10   tendon/ligament-like tissue inducing protein may have prophylactic use in preventing

damage to tendon or ligament tissue, as well as use in the improved fixation of tendon or

ligament to bone or other tissues, and in repairing defects to tendon or ligament tissue.

De novo tendon/ligament-like tissue formation induced by a composition of the present

invention contributes to the repair of congenital, trauma induced, or other tendon or

15   ligament defects of other origin, and is also useful in cosmetic plastic surgery for

attachment or repair of tendons or ligaments. The compositions of the present invention

may provide environment to attract tendon- or ligament-forming cells, stimulate growth

of tendon- or ligament-forming cells, induce differentiation of progenitors of tendon- or

ligament-forming cells, or induce growth of tendon/ligament cells or progenitors *ex vivo*

20   for return *in vivo* to effect tissue repair. The compositions of the invention may also be

useful in the treatment of tendinitis, carpal tunnel syndrome and other tendon or ligament

defects. The compositions may also include an appropriate matrix and/or sequestering

agent as a carrier as is well known in the art.

The compositions of the present invention may also be useful for proliferation of

25   neural cells and for regeneration of nerve and brain tissue, i.e. for the treatment of central

and peripheral nervous system diseases and neuropathies, as well as mechanical and

traumatic disorders, which involve degeneration, death or trauma to neural cells or nerve

tissue. More specifically, a composition may be used in the treatment of diseases of the

peripheral nervous system, such as peripheral nerve injuries, peripheral neuropathy and

30   localized neuropathies, and central nervous system diseases, such as Alzheimer's,

Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager

syndrome. Further conditions which may be treated in accordance with the present invention include mechanical and traumatic disorders, such as spinal cord disorders, head trauma and cerebrovascular diseases such as stroke. Peripheral neuropathies resulting from chemotherapy or other medical therapies may also be treatable using a composition
5   of the invention.

Compositions of the invention may also be useful to promote better or faster closure of non-healing wounds, including without limitation pressure ulcers, ulcers associated with vascular insufficiency, surgical and traumatic wounds, and the like.

Compositions of the present invention may also be involved in the generation or
10   regeneration of other tissues, such as organs (including, for example, pancreas, liver, intestine, kidney, skin, endothelium), muscle (smooth, skeletal or cardiac) and vascular (including vascular endothelium) tissue, or for promoting the growth of cells comprising such tissues. Part of the desired effects may be by inhibition or modulation of fibrotic scarring may allow normal tissue to regenerate. A polypeptide of the present invention
15   may also exhibit angiogenic activity.

A composition of the present invention may also be useful for gut protection or regeneration and treatment of lung or liver fibrosis, reperfusion injury in various tissues, and conditions resulting from systemic cytokine damage.

A composition of the present invention may also be useful for promoting or
20   inhibiting differentiation of tissues described above from precursor tissues or cells; or for inhibiting the growth of tissues described above.

Therapeutic compositions of the invention can be used in the following:

Assays for tissue generation activity include, without limitation, those described in: International Patent Publication No. WO95/16035 (bone, cartilage, tendon);
25   International Patent Publication No. WO95/05846 (nerve, neuronal); International Patent Publication No. WO91/07491 (skin, endothelium).

Assays for wound healing activity include, without limitation, those described in: Winter, Epidermal Wound Healing, pps. 71-112 (Maibach, H. I. and Rovee, D. T., eds.), Year Book Medical Publishers, Inc., Chicago, as modified by Eaglstein and Mertz, J.
30   Invest. Dermatol 71:382-84 (1978).

4.10.7 IMMUNE STIMULATING OR SUPPRESSING ACTIVITY

A polypeptide of the present invention may also exhibit immune stimulating or immune suppressing activity, including without limitation the activities for which assays are described herein. A polynucleotide of the invention can encode a polypeptide

5 exhibiting such activities. A protein may be useful in the treatment of various immune deficiencies and disorders (including severe combined immunodeficiency (SCID)), e.g., in regulating (up or down) growth and proliferation of T and/or B lymphocytes, as well as effecting the cytolytic activity of NK cells and other cell populations. These immune deficiencies may be genetic or be caused by viral (e.g., HIV) as well as bacterial or

10 fungal infections, or may result from autoimmune disorders. More specifically, infectious diseases causes by viral, bacterial, fungal or other infection may be treatable using a protein of the present invention, including infections by HIV, hepatitis viruses, herpes viruses, mycobacteria, Leishmania spp., malaria spp. and various fungal infections such as candidiasis. Of course, in this regard, proteins of the present invention may also be

15 useful where a boost to the immune system generally may be desirable, i.e., in the treatment of cancer.

Autoimmune disorders which may be treated using a protein of the present invention include, for example, connective tissue disease, multiple sclerosis, systemic lupus erythematosus, rheumatoid arthritis, autoimmune pulmonary inflammation,

20 Guillain-Barre syndrome, autoimmune thyroiditis, insulin dependent diabetes mellitis, myasthenia gravis, graft-versus-host disease and autoimmune inflammatory eye disease. Such a protein (or antagonists thereof, including antibodies) of the present invention may also to be useful in the treatment of allergic reactions and conditions (e.g., anaphylaxis, serum sickness, drug reactions, food allergies, insect venom allergies, mastocytosis,

25 allergic rhinitis, hypersensitivity pneumonitis, urticaria, angioedema, eczema, atopic dermatitis, allergic contact dermatitis, erythema multiforme, Stevens-Johnson syndrome, allergic conjunctivitis, atopic keratoconjunctivitis, venereal keratoconjunctivitis, giant papillary conjunctivitis and contact allergies), such as asthma (particularly allergic asthma) or other respiratory problems. Other conditions, in which immune suppression is

30 desired (including, for example, organ transplantation), may also be treatable using a protein (or antagonists thereof) of the present invention. The therapeutic effects of the

polypeptides or antagonists thereof on allergic reactions can be evaluated by in vivo

animals models such as the cumulative contact enhancement test (Lastbom et al.,

Toxicology 125: 59-66, 1998), skin prick test (Hoffmann et al., Allergy 54: 446-54,

1999), guinea pig skin sensitization test (Vohr et al., Arch. Toxocol. 73: 501-9), and

5   murine local lymph node assay (Kimber et al., J. Toxicol. Environ. Health 53: 563-79).

        Using the proteins of the invention it may also be possible to modulate immune

responses, in a number of ways. Down regulation may be in the form of inhibiting or

blocking an immune response already in progress or may involve preventing the

induction of an immune response. The functions of activated T cells may be inhibited by

10   suppressing T cell responses or by inducing specific tolerance in T cells, or both.

Immunosuppression of T cell responses is generally an active, non-antigen-specific,

process which requires continuous exposure of the T cells to the suppressive agent.

Tolerance, which involves inducing non-responsiveness or anergy in T cells, is

distinguishable from immunosuppression in that it is generally antigen-specific and

15   persists after exposure to the tolerizing agent has ceased. Operationally, tolerance can be

demonstrated by the lack of a T cell response upon reexposure to specific antigen in the

absence of the tolerizing agent.

        Down regulating or preventing one or more antigen functions (including without

limitation B lymphocyte antigen functions (such as, for example, B7)), e.g., preventing

20   high level lymphokine synthesis by activated T cells, will be useful in situations of tissue,

skin and organ transplantation and in graft-versus-host disease (GVHD). For example,

blockage of T cell function should result in reduced tissue destruction in tissue

transplantation. Typically, in tissue transplants, rejection of the transplant is initiated

through its recognition as foreign by T cells, followed by an immune reaction that

25   destroys the transplant. The administration of a therapeutic composition of the invention

may prevent cytokine synthesis by immune cells, such as T cells, and thus acts as an

immunosuppressant. Moreover, a lack of costimulation may also be sufficient to anergize

the T cells, thereby inducing tolerance in a subject. Induction of long-term tolerance by B

lymphocyte antigen-blocking reagents may avoid the necessity of repeated administration

30   of these blocking reagents. To achieve sufficient immunosuppression or tolerance in a

subject, it may also be necessary to block the function of a combination of B lymphocyte antigens.

The efficacy of particular therapeutic compositions in preventing organ transplant rejection or GVHD can be assessed using animal models that are predictive of efficacy in humans. Examples of appropriate systems which can be used include allogeneic cardiac grafts in rats and xenogeneic pancreatic islet cell grafts in mice, both of which have been used to examine the immunosuppressive effects of CTLA4Ig fusion proteins in vivo as described in Lenschow et al., Science 257:789-792 (1992) and Turka et al., Proc. Natl. Acad. Sci USA, 89:11102-11105 (1992). In addition, murine models of GVHD (see Paul ed., Fundamental Immunology, Raven Press, New York, 1989, pp. 846-847) can be used to determine the effect of therapeutic compositions of the invention on the development of that disease.

Blocking antigen function may also be therapeutically useful for treating autoimmune diseases. Many autoimmune disorders are the result of inappropriate activation of T cells that are reactive against self tissue and which promote the production of cytokines and autoantibodies involved in the pathology of the diseases. Preventing the activation of autoreactive T cells may reduce or eliminate disease symptoms. Administration of reagents which block stimulation of T cells can be used to inhibit T cell activation and prevent production of autoantibodies or T cell-derived cytokines which may be involved in the disease process. Additionally, blocking reagents may induce antigen-specific tolerance of autoreactive T cells which could lead to long-term relief from the disease. The efficacy of blocking reagents in preventing or alleviating autoimmune disorders can be determined using a number of well-characterized animal models of human autoimmune diseases. Examples include murine experimental autoimmune encephalitis, systemic lupus erythmatosis in MRL/lpr/lpr mice or NZB hybrid mice, murine autoimmune collagen arthritis, diabetes mellitus in NOD mice and BB rats, and murine experimental myasthenia gravis (see Paul ed., Fundamental Immunology, Raven Press, New York, 1989, pp. 840-856).

Upregulation of an antigen function (e.g., a B lymphocyte antigen function), as a means of up regulating immune responses, may also be useful in therapy. Upregulation of immune responses may be in the form of enhancing an existing immune response or

eliciting an initial immune response. For example, enhancing an immune response may be useful in cases of viral infection, including systemic viral diseases such as influenza, the common cold, and encephalitis.

Alternatively, anti-viral immune responses may be enhanced in an infected patient

5   by removing T cells from the patient, costimulating the T cells in vitro with viral antigen-pulsed APCs either expressing a peptide of the present invention or together with a stimulatory form of a soluble peptide of the present invention and reintroducing the in vitro activated T cells into the patient. Another method of enhancing anti-viral immune responses would be to isolate infected cells from a patient, transfect them with a nucleic

10   acid encoding a protein of the present invention as described herein such that the cells express all or a portion of the protein on their surface, and reintroduce the transfected cells into the patient. The infected cells would now be capable of delivering a costimulatory signal to, and thereby activate, T cells in vivo.

A polypeptide of the present invention may provide the necessary stimulation

15   signal to T cells to induce a T cell mediated immune response against the transfected tumor cells. In addition, tumor cells which lack MHC class I or MHC class II molecules, or which fail to reexpress sufficient mounts of MHC class I or MHC class II molecules, can be transfected with nucleic acid encoding all or a portion of (e.g., a cytoplasmic-domain truncated portion) of an MHC class I alpha chain protein and β_2

20   microglobulin protein or an MHC class II alpha chain protein and an MHC class II beta chain protein to thereby express MHC class I or MHC class II proteins on the cell surface. Expression of the appropriate class I or class II MHC in conjunction with a peptide having the activity of a B lymphocyte antigen (e.g., B7-1, B7-2, B7-3) induces a T cell mediated immune response against the transfected tumor cell. Optionally, a gene

25   encoding an antisense construct which blocks expression of an MHC class II associated protein, such as the invariant chain, can also be cotransfected with a DNA encoding a peptide having the activity of a B lymphocyte antigen to promote presentation of tumor associated antigens and induce tumor specific immunity. Thus, the induction of a T cell mediated immune response in a human subject may be sufficient to overcome

30   tumor-specific tolerance in the subject.

The activity of a protein of the invention may, among other means, be measured
by the following methods:

Suitable assays for thymocyte or splenocyte cytotoxicity include, without
limitation, those described in: Current Protocols in Immunology, Ed by J. E. Coligan, A.

5 M. Kruisbeek, D. H. Margulies, E. M. Shevach, W. Strober, Pub. Greene Publishing
Associates and Wiley-Interscience (Chapter 3, In Vitro assays for Mouse Lymphocyte
Function 3.1-3.19; Chapter 7, Immunologic studies in Humans); Herrmann et al., Proc.
Natl. Acad. Sci. USA 78:2488-2492, 1981; Herrmann et al., J. Immunol. 128:1968-1974,
1982; Handa et al., J. Immunol. 135:1564-1572, 1985; Takai et al., I. Immunol.

10 137:3494-3500, 1986; Takai et al., J. Immunol. 140:508-512, 1988; Bowman et al., J.
Virology 61:1992-1998; Bertagnolli et al., Cellular Immunology 133:327-341, 1991;
Brown et al., J. Immunol. 153:3079-3092, 1994.

Assays for T-cell-dependent immunoglobulin responses and isotype switching
(which will identify, among others, proteins that modulate T-cell dependent antibody

15 responses and that affect Th1/Th2 profiles) include, without limitation, those described
in: Maliszewski, J. Immunol. 144:3028-3033, 1990; and Assays for B cell function: In
vitro antibody production, Mond, J. J. and Brunswick, M. In Current Protocols in
Immunology. J. E. e.a. Coligan eds. Vol 1 pp. 3.8.1-3.8.16, John Wiley and Sons,
Toronto. 1994.

20 Mixed lymphocyte reaction (MLR) assays (which will identify, among others,
proteins that generate predominantly Th1 and CTL responses) include, without limitation,
those described in: Current Protocols in Immunology, Ed by J. E. Coligan, A. M.
Kruisbeek, D. H. Margulies, E. M. Shevach, W. Strober, Pub. Greene Publishing
Associates and Wiley-Interscience (Chapter 3, In Vitro assays for Mouse Lymphocyte

25 Function 3.1-3.19; Chapter 7, Immunologic studies in Humans); Takai et al., J. Immunol.
137:3494-3500, 1986; Takai et al., J. Immunol. 140:508-512, 1988; Bertagnolli et al., J.
Immunol. 149:3778-3783, 1992.

Dendritic cell-dependent assays (which will identify, among others, proteins
expressed by dendritic cells that activate naive T-cells) include, without limitation, those

30 described in: Guery et al., J. Immunol. 134:536-544, 1995; Inaba et al., Journal of
Experimental Medicine 173:549-559, 1991; Macatonia et al., Journal of Immunology

154:5071-5079, 1995; Porgador et al., Journal of Experimental Medicine 182:255-260, 1995; Nair et al., Journal of Virology 67:4062-4069, 1993; Huang et al., Science 264:961-965, 1994; Macatonia et al., Journal of Experimental Medicine 169:1255-1264, 1989; Bhardwaj et al., Journal of Clinical Investigation 94:797-807, 1994; and Inaba et

5 al., Journal of Experimental Medicine 172:631-640, 1990.

Assays for lymphocyte survival/apoptosis (which will identify, among others, proteins that prevent apoptosis after superantigen induction and proteins that regulate lymphocyte homeostasis) include, without limitation, those described in: Darzynkiewicz et al., Cytometry 13:795-808, 1992; Gorczyca et al., Leukemia 7:659-670, 1993;

10 Gorczyca et al., Cancer Research 53:1945-1951, 1993; Itoh et al., Cell 66:233-243, 1991; Zacharchuk, Journal of Immunology 145:4037-4045, 1990; Zamai et al., Cytometry 14:891-897, 1993; Gorczyca et al., International Journal of Oncology 1:639-648, 1992.

Assays for proteins that influence early steps of T-cell commitment and development include, without limitation, those described in: Antica et al., Blood

15 84:111-117, 1994; Fine et al., Cellular Immunology 155:111-122, 1994; Galy et al., Blood 85:2770-2778, 1995; Toki et al., Proc. Nat. Acad Sci. USA 88:7548-7551, 1991.

4.10.8 ACTIVIN/INHIBIN ACTIVITY

A polypeptide of the present invention may also exhibit activin- or inhibin-related

20 activities. A polynucleotide of the invention may encode a polypeptide exhibiting such characteristics. Inhibins are characterized by their ability to inhibit the release of follicle stimulating hormone (FSH), while activins and are characterized by their ability to stimulate the release of follicle stimulating hormone (FSH). Thus, a polypeptide of the present invention, alone or in heterodimers with a member of the inhibin family, may be

25 useful as a contraceptive based on the ability of inhibins to decrease fertility in female mammals and decrease spermatogenesis in male mammals. Administration of sufficient amounts of other inhibins can induce infertility in these mammals. Alternatively, the polypeptide of the invention, as a homodimer or as a heterodimer with other protein subunits of the inhibin group, may be useful as a fertility inducing therapeutic, based

30 upon the ability of activin molecules in stimulating FSH release from cells of the anterior pituitary. See, for example, U.S. Pat. No. 4,798,885. A polypeptide of the invention may

also be useful for advancement of the onset of fertility in sexually immature mammals, so as to increase the lifetime reproductive performance of domestic animals such as, but not limited to, cows, sheep and pigs.

The activity of a polypeptide of the invention may, among other means, be

5   measured by the following methods.

Assays for activin/inhibin activity include, without limitation, those described in: Vale et al., Endocrinology 91:562-572, 1972; Ling et al., Nature 321:779-782, 1986; Vale et al., Nature 321:776-779, 1986; Mason et al., Nature 318:659-663, 1985; Forage et al., Proc. Natl. Acad. Sci. USA 83:3091-3095, 1986.

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4.10.9 CHEMOTACTIC/CHEMOKINETIC ACTIVITY

A polypeptide of the present invention may be involved in chemotactic or chemokinetic activity for mammalian cells, including, for example, monocytes, fibroblasts, neutrophils, T-cells, mast cells, eosinophils, epithelial and/or endothelial

15   cells. A polynucleotide of the invention can encode a polypeptide exhibiting such attributes. Chemotactic and chemokinetic receptor activation can be used to mobilize or attract a desired cell population to a desired site of action. Chemotactic or chemokinetic compositions (e.g. proteins, antibodies, binding partners, or modulators of the invention) provide particular advantages in treatment of wounds and other trauma to tissues, as well

20   as in treatment of localized infections. For example, attraction of lymphocytes, monocytes or neutrophils to tumors or sites of infection may result in improved immune responses against the tumor or infecting agent.

A protein or peptide has chemotactic activity for a particular cell population if it can stimulate, directly or indirectly, the directed orientation or movement of such cell

25   population. Preferably, the protein or peptide has the ability to directly stimulate directed movement of cells. Whether a particular protein has chemotactic activity for a population of cells can be readily determined by employing such protein or peptide in any known assay for cell chemotaxis.

Therapeutic compositions of the invention can be used in the following:

30   Assays for chemotactic activity (which will identify proteins that induce or prevent chemotaxis) consist of assays that measure the ability of a protein to induce the

migration of cells across a membrane as well as the ability of a protein to induce the adhesion of one cell population to another cell population. Suitable assays for movement and adhesion include, without limitation, those described in: Current Protocols in Immunology, Ed by J. E. Coligan, A. M. Kruisbeek, D. H. Marguiles, E. M. Shevach, W.

5   Strober, Pub. Greene Publishing Associates and Wiley-Interscience (Chapter 6.12, Measurement of alpha and beta Chemokines 6.12.1-6.12.28; Taub et al. J. Clin. Invest. 95:1370-1376, 1995; Lind et al. APMIS 103:140-146, 1995; Muller et al Eur. J. Immunol. 25:1744-1748; Gruber et al. J. of Immunol. 152:5860-5867, 1994; Johnston et al. J. of Immunol. 153:1762-1768, 1994.

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4.10.10   HEMOSTATIC AND THROMBOLYTIC ACTIVITY

A polypeptide of the invention may also be involved in hemostatis or thrombolysis or thrombosis. A polynucleotide of the invention can encode a polypeptide exhibiting such attributes. Compositions may be useful in treatment of various

15   coagulation disorders (including hereditary disorders, such as hemophilias) or to enhance coagulation and other hemostatic events in treating wounds resulting from trauma, surgery or other causes. A composition of the invention may also be useful for dissolving or inhibiting formation of thromboses and for treatment and prevention of conditions resulting therefrom (such as, for example, infarction of cardiac and central nervous

20   system vessels (e.g., stroke).

Therapeutic compositions of the invention can be used in the following:

Assay for hemostatic and thrombolytic activity include, without limitation, those described in: Linet et al., J. Clin. Pharmacol. 26:131-140, 1986; Burdick et al., Thrombosis Res. 45:413-419, 1987; Humphrey et al., Fibrinolysis 5:71-79 (1991);

25   Schaub, Prostaglandins 35:467-474, 1988.

4.10.11   CANCER DIAGNOSIS AND THERAPY

Polypeptides of the invention may be involved in cancer cell generation, proliferation or metastasis. Detection of the presence or amount of polynucleotides or

30   polypeptides of the invention may be useful for the diagnosis and/or prognosis of one or more types of cancer. For example, the presence or increased expression of a

polynucleotide/polypeptide of the invention may indicate a hereditary risk of cancer, a precancerous condition, or an ongoing malignancy. Conversely, a defect in the gene or absence of the polypeptide may be associated with a cancer condition. Identification of single nucleotide polymorphisms associated with cancer or a predisposition to cancer

5   may also be useful for diagnosis or prognosis.

Cancer treatments promote tumor regression by inhibiting tumor cell proliferation, inhibiting angiogenesis (growth of new blood vessels that is necessary to support tumor growth) and/or prohibiting metastasis by reducing tumor cell motility or invasiveness. Therapeutic compositions of the invention may be effective in adult and

10   pediatric oncology including in solid phase tumors/malignancies, locally advanced tumors, human soft tissue sarcomas, metastatic cancer, including lymphatic metastases, blood cell malignancies including multiple myeloma, acute and chronic leukemias, and lymphomas, head and neck cancers including mouth cancer, larynx cancer and thyroid cancer, lung cancers including small cell carcinoma and non-small cell cancers, breast

15   cancers including small cell carcinoma and ductal carcinoma, gastrointestinal cancers including esophageal cancer, stomach cancer, colon cancer, colorectal cancer and polyps associated with colorectal neoplasia, pancreatic cancers, liver cancer, urologic cancers including bladder cancer and prostate cancer, malignancies of the female genital tract including ovarian carcinoma, uterine (including endometrial) cancers, and solid tumor in

20   the ovarian follicle, kidney cancers including renal cell carcinoma, brain cancers including intrinsic brain tumors, neuroblastoma, astrocytic brain tumors, gliomas, metastatic tumor cell invasion in the central nervous system, bone cancers including osteomas, skin cancers including malignant melanoma, tumor progression of human skin keratinocytes, squamous cell carcinoma, basal cell carcinoma, hemangiopericytoma and

25   Karposi's sarcoma.

Polypeptides, polynucleotides, or modulators of polypeptides of the invention (including inhibitors and stimulators of the biological activity of the polypeptide of the invention) may be administered to treat cancer. Therapeutic compositions can be administered in therapeutically effective dosages alone or in combination with adjuvant

30   cancer therapy such as surgery, chemotherapy, radiotherapy, thermotherapy, and laser therapy, and may provide a beneficial effect, e.g. reducing tumor size, slowing rate of

tumor growth, inhibiting metastasis, or otherwise improving overall clinical condition, without necessarily eradicating the cancer.

The composition can also be administered in therapeutically effective amounts as a portion of an anti-cancer cocktail. An anti-cancer cocktail is a mixture of the
5   polypeptide or modulator of the invention with one or more anti-cancer drugs in addition to a pharmaceutically acceptable carrier for delivery. The use of anti-cancer cocktails as a cancer treatment is routine. Anti-cancer drugs that are well known in the art and can be used as a treatment in combination with the polypeptide or modulator of the invention include: Actinomycin D, Aminoglutethimide, Asparaginase, Bleomycin, Busulfan,
10   Carboplatin, Carmustine, Chlorambucil, Cisplatin (cis-DDP), Cyclophosphamide, Cytarabine HCl (Cytosine arabinoside), Dacarbazine, Dactinomycin, Daunorubicin HCl, Doxorubicin HCl, Estramustine phosphate sodium, Etoposide (V16-213), Floxuridine, 5-Fluorouracil (5-Fu), Flutamide, Hydroxyurea (hydroxycarbamide), Ifosfamide, Interferon Alpha-2a, Interferon Alpha-2b, Leuprolide acetate (LHRH-releasing factor analog),
15   Lomustine, Mechlorethamine HCl (nitrogen mustard), Melphalan, Mercaptopurine, Mesna, Methotrexate (MTX), Mitomycin, Mitoxantrone HCl, Octreotide, Plicamycin, Procarbazine HCl, Streptozocin, Tamoxifen citrate, Thioguanine, Thiotepa, Vinblastine sulfate, Vincristine sulfate, Amsacrine, Azacitidine, Hexamethylmelamine, Interleukin-2, Mitoguazone, Pentostatin, Semustine, Teniposide, and Vindesine sulfate.

20   In addition, therapeutic compositions of the invention may be used for prophylactic treatment of cancer. There are hereditary conditions and/or environmental situations (e.g. exposure to carcinogens) known in the art that predispose an individual to developing cancers. Under these circumstances, it may be beneficial to treat these individuals with therapeutically effective doses of the polypeptide of the invention to
25   reduce the risk of developing cancers.

In vitro models can be used to determine the effective doses of the polypeptide of the invention as a potential cancer treatment. These in vitro models include proliferation assays of cultured tumor cells, growth of cultured tumor cells in soft agar (see Freshney, (1987) Culture of Animal Cells: A Manual of Basic Technique, Wily-Liss, New York,
30   NY Ch 18 and Ch 21), tumor systems in nude mice as described in Giovanella et al., J. Natl. Can. Inst., 52: 921-30 (1974), mobility and invasive potential of tumor cells in

Boyden Chamber assays as described in Pilkington et al., Anticancer Res., 17: 4107-9

(1997), and angiogenesis assays such as induction of vascularization of the chick

chorioallantoic membrane or induction of vascular endothelial cell migration as described

in Ribatta et al., Intl. J. Dev. Biol., 40: 1189-97 (1999) and Li et al., Clin. Exp.

5   Metastasis, 17:423-9 (1999), respectively. Suitable tumor cells lines are available, e.g.

from American Type Tissue Culture Collection catalogs.

4.10.12   RECEPTOR/LIGAND ACTIVITY

A polypeptide of the present invention may also demonstrate activity as receptor,

10   receptor ligand or inhibitor or agonist of receptor/ligand interactions. A polynucleotide

of the invention can encode a polypeptide exhibiting such characteristics. Examples of

such receptors and ligands include, without limitation, cytokine receptors and their

ligands, receptor kinases and their ligands, receptor phosphatases and their ligands,

receptors involved in cell-cell interactions and their ligands (including without limitation,

15   cellular adhesion molecules (such as selectins, integrins and their ligands) and

receptor/ligand pairs involved in antigen presentation, antigen recognition and

development of cellular and humoral immune responses. Receptors and ligands are also

useful for screening of potential peptide or small molecule inhibitors of the relevant

receptor/ligand interaction. A protein of the present invention (including, without

20   limitation, fragments of receptors and ligands) may themselves be useful as inhibitors of

receptor/ligand interactions.

The activity of a polypeptide of the invention may, among other means, be

measured by the following methods:

Suitable assays for receptor-ligand activity include without limitation those

25   described in: Current Protocols in Immunology, Ed by J. E. Coligan, A. M. Kruisbeek,

D. H. Margulies, E. M. Shevach, W. Strober, Pub. Greene Publishing Associates and

Wiley- Interscience (Chapter 7.28, Measurement of Cellular Adhesion under static

conditions 7.28.1- 7.28.22), Takai et al., Proc. Natl. Acad. Sci. USA 84:6864-6868, 1987;

Bierer et al., J. Exp. Med. 168:1145-1156, 1988; Rosenstein et al., J. Exp. Med.

30   169:149-160 1989; Stoltenborg et al., J. Immunol. Methods 175:59-68, 1994; Stitt et al.,

Cell 80:661-670, 1995.

By way of example, the polypeptides of the invention may be used as a receptor for a ligand(s) thereby transmitting the biological activity of that ligand(s). Ligands may be identified through binding assays, affinity chromatography, dihybrid screening assays, BIAcore assays, gel overlay assays, or other methods known in the art.

5   Studies characterizing drugs or proteins as agonist or antagonist or partial agonists or a partial antagonist require the use of other proteins as competing ligands. The polypeptides of the present invention or ligand(s) thereof may be labeled by being coupled to radioisotopes, colorimetric molecules or a toxin molecules by conventional methods. ("Guide to Protein Purification" Murray P. Deutscher (ed) Methods in

10   Enzymology Vol. 182 (1990) Academic Press, Inc. San Diego). Examples of radioisotopes include, but are not limited to, tritium and carbon-14 . Examples of colorimetric molecules include, but are not limited to, fluorescent molecules such as fluorescamine, or rhodamine or other colorimetric molecules. Examples of toxins include, but are not limited, to ricin.

15

4.10.13   DRUG SCREENING

This invention is particularly useful for screening chemical compounds by using the novel polypeptides or binding fragments thereof in any of a variety of drug screening techniques. The polypeptides or fragments employed in such a test may either be free in

20   solution, affixed to a solid support, borne on a cell surface or located intracellularly. One method of drug screening utilizes eukaryotic or prokaryotic host cells which are stably transformed with recombinant nucleic acids expressing the polypeptide or a fragment thereof. Drugs are screened against such transformed cells in competitive binding assays. Such cells, either in viable or fixed form, can be used for standard binding assays. One

25   may measure, for example, the formation of complexes between polypeptides of the invention or fragments and the agent being tested or examine the diminution in complex formation between the novel polypeptides and an appropriate cell line, which are well known in the art.

Sources for test compounds that may be screened for ability to bind to or

30   modulate (i.e., increase or decrease) the activity of polypeptides of the invention include (1) inorganic and organic chemical libraries, (2) natural product libraries, and (3)

combinatorial libraries comprised of either random or mimetic peptides, oligonucleotides or organic molecules.

Chemical libraries may be readily synthesized or purchased from a number of commercial sources, and may include structural analogs of known compounds or
5   compounds that are identified as "hits" or "leads" via natural product screening.

The sources of natural product libraries are microorganisms (including bacteria and fungi), animals, plants or other vegetation, or marine organisms, and libraries of mixtures for screening may be created by: (1) fermentation and extraction of broths from soil, plant or marine microorganisms or (2) extraction of the organisms themselves.
10   Natural product libraries include polyketides, non-ribosomal peptides, and (non-naturally occurring) variants thereof. For a review, see *Science 282*:63-68 (1998).

Combinatorial libraries are composed of large numbers of peptides, oligonucleotides or organic compounds and can be readily prepared by traditional automated synthesis methods, PCR, cloning or proprietary synthetic methods. Of
15   particular interest are peptide and oligonucleotide combinatorial libraries. Still other libraries of interest include peptide, protein, peptidomimetic, multiparallel synthetic collection, recombinatorial, and polypeptide libraries. For a review of combinatorial chemistry and libraries created therefrom, see Myers, *Curr. Opin. Biotechnol.* 8:701-707 (1997). For reviews and examples of peptidomimetic libraries, see Al-Obeidi et al., *Mol.*
20   *Biotechnol*, 9(3):205-23 (1998); Hruby et al., *Curr Opin Chem Biol*, 1(1):114-19 (1997); Dorner et al., *Bioorg Med Chem*, 4(5):709-15 (1996) (alkylated dipeptides).

Identification of modulators through use of the various libraries described herein permits modification of the candidate "hit" (or "lead") to optimize the capacity of the "hit" to bind a polypeptide of the invention. The molecules identified in the binding assay
25   are then tested for antagonist or agonist activity in *in vivo* tissue culture or animal models that are well known in the art. In brief, the molecules are titrated into a plurality of cell cultures or animals and then tested for either cell/animal death or prolonged survival of the animal/cells.

The binding molecules thus identified may be complexed with toxins, e.g., ricin
30   or cholera, or with other compounds that are toxic to cells such as radioisotopes. The toxin-binding molecule complex is then targeted to a tumor or other cell by the specificity

of the binding molecule for a polypeptide of the invention. Alternatively, the binding molecules may be complexed with imaging agents for targeting and imaging purposes.

4.10.14   ASSAY FOR RECEPTOR ACTIVITY

5   The invention also provides methods to detect specific binding of a polypeptide e.g. a ligand or a receptor. The art provides numerous assays particularly useful for identifying previously unknown binding partners for receptor polypeptides of the invention. For example, expression cloning using mammalian or bacterial cells, or dihybrid screening assays can be used to identify polynucleotides encoding binding

10   partners. As another example, affinity chromatography with the appropriate immobilized polypeptide of the invention can be used to isolate polypeptides that recognize and bind polypeptides of the invention. There are a number of different libraries used for the identification of compounds, and in particular small molecules, that modulate (*i.e.,* increase or decrease) biological activity of a polypeptide of the invention. Ligands for

15   receptor polypeptides of the invention can also be identified by adding exogenous ligands, or cocktails of ligands to two cells populations that are genetically identical except for the expression of the receptor of the invention: one cell population expresses the receptor of the invention whereas the other does not. The response of the two cell populations to the addition of ligands(s) are then compared. Alternatively, an expression

20   library can be co-expressed with the polypeptide of the invention in cells and assayed for an autocrine response to identify potential ligand(s). As still another example, BIAcore assays, gel overlay assays, or other methods known in the art can be used to identify binding partner polypeptides, including, (1) organic and inorganic chemical libraries, (2) natural product libraries, and (3) combinatorial libraries comprised of random peptides,

25   oligonucleotides or organic molecules.

The role of downstream intracellular signaling molecules in the signaling cascade of the polypeptide of the invention can be determined. For example, a chimeric protein in which the cytoplasmic domain of the polypeptide of the invention is fused to the extracellular portion of a protein, whose ligand has been identified, is produced in a host

30   cell. The cell is then incubated with the ligand specific for the extracellular portion of the chimeric protein, thereby activating the chimeric receptor. Known downstream proteins

involved in intracellular signaling can then be assayed for expected modifications i.e. phosphorylation. Other methods known to those in the art can also be used to identify signaling molecules involved in receptor activity.

5   4.10.15   ANTI-INFLAMMATORY ACTIVITY

Compositions of the present invention may also exhibit anti-inflammatory activity. The anti-inflammatory activity may be achieved by providing a stimulus to cells involved in the inflammatory response, by inhibiting or promoting cell-cell interactions (such as, for example, cell adhesion), by inhibiting or promoting chemotaxis of cells involved in the inflammatory process, inhibiting or promoting cell extravasation, or by stimulating or suppressing production of other factors which more directly inhibit or promote an inflammatory response. Compositions with such activities can be used to treat inflammatory conditions including chronic or acute conditions), including without limitation intimation associated with infection (such as septic shock, sepsis or systemic inflammatory response syndrome (SIRS)), ischemia-reperfusion injury, endotoxin lethality, arthritis, complement-mediated hyperacute rejection, nephritis, cytokine or chemokine-induced lung injury, inflammatory bowel disease, Crohn's disease or resulting from over production of cytokines such as TNF or IL-1. Compositions of the invention may also be useful to treat anaphylaxis and hypersensitivity to an antigenic substance or material. Compositions of this invention may be utilized to prevent or treat conditions such as, but not limited to, sepsis, acute pancreatitis, endotoxin shock, cytokine induced shock, rheumatoid arthritis, chronic inflammatory arthritis, pancreatic cell damage from diabetes mellitus type 1, graft versus host disease, inflammatory bowel disease, inflamation associated with pulmonary disease, other autoimmune disease or inflammatory disease, an antiproliferative agent such as for acute or chronic mylegenous leukemia or in the prevention of premature labor secondary to intrauterine infections.

          4.10.16   LEUKEMIAS

Leukemias and related disorders may be treated or prevented by administration of a therapeutic that promotes or inhibits function of the polynucleotides and/or polypeptides of the invention. Such leukemias and related disorders include but are not

limited to acute leukemia, acute lymphocytic leukemia, acute myelocytic leukemia, myeloblastic, promyelocytic, myelomonocytic, monocytic, erythroleukemia, chronic leukemia, chronic myelocytic (granulocytic) leukemia and chronic lymphocytic leukemia (for a review of such disorders, see Fishman et al., 1985, Medicine, 2d Ed., J.B.

5   Lippincott Co., Philadelphia).

4.10.17   NERVOUS SYSTEM DISORDERS

Nervous system disorders, involving cell types which can be tested for efficacy of intervention with compounds that modulate the activity of the polynucleotides and/or

10   polypeptides of the invention, and which can be treated upon thus observing an indication of therapeutic utility, include but are not limited to nervous system injuries, and diseases or disorders which result in either a disconnection of axons, a diminution or degeneration of neurons, or demyelination. Nervous system lesions which may be treated in a patient (including human and non-human mammalian patients) according to the invention

15   include but are not limited to the following lesions of either the central (including spinal cord, brain) or peripheral nervous systems:

(i)   traumatic lesions, including lesions caused by physical injury or associated with surgery, for example, lesions which sever a portion of the nervous system, or compression injuries;

20   (ii)   ischemic lesions, in which a lack of oxygen in a portion of the nervous system results in neuronal injury or death, including cerebral infarction or ischemia, or spinal cord infarction or ischemia;

(iii)   infectious lesions, in which a portion of the nervous system is destroyed or injured as a result of infection, for example, by an abscess or associated with infection by

25   human immunodeficiency virus, herpes zoster, or herpes simplex virus or with Lyme disease, tuberculosis, syphilis;

(iv)   degenerative lesions, in which a portion of the nervous system is destroyed or injured as a result of a degenerative process including but not limited to degeneration associated with Parkinson's disease, Alzheimer's disease, Huntington's chorea, or

30   amyotrophic lateral sclerosis;

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(v)   lesions associated with nutritional diseases or disorders, in which a portion of the nervous system is destroyed or injured by a nutritional disorder or disorder of metabolism including but not limited to, vitamin B12 deficiency, folic acid deficiency, Wernicke disease, tobacco-alcohol amblyopia, Marchiafava-Bignami disease (primary

5   degeneration of the corpus callosum), and alcoholic cerebellar degeneration;

(vi)   neurological lesions associated with systemic diseases including but not limited to diabetes (diabetic neuropathy, Bell's palsy), systemic lupus erythematosus, carcinoma, or sarcoidosis;

(vii)   lesions caused by toxic substances including alcohol, lead, or particular

10   neurotoxins; and

(viii)   demyelinated lesions in which a portion of the nervous system is destroyed or injured by a demyelinating disease including but not limited to multiple sclerosis, human immunodeficiency virus-associated myelopathy, transverse myelopathy or various etiologies, progressive multifocal leukoencephalopathy, and central pontine

15   myelinolysis.

Therapeutics which are useful according to the invention for treatment of a nervous system disorder may be selected by testing for biological activity in promoting the survival or differentiation of neurons. For example, and not by way of limitation, therapeutics which elicit any of the following effects may be useful according to the

20   invention:

(i)   increased survival time of neurons in culture;

(ii)   increased sprouting of neurons in culture or in vivo;

(iii)   increased production of a neuron-associated molecule in culture or *in vivo*, *e.g.*, choline acetyltransferase or acetylcholinesterase with respect to motor neurons; or

25   (iv)   decreased symptoms of neuron dysfunction in vivo.

Such effects may be measured by any method known in the art. In preferred, non-limiting embodiments, increased survival of neurons may be measured by the method set forth in Arakawa et al. (1990, J. Neurosci. 10:3507-3515); increased sprouting of neurons may be detected by methods set forth in Pestronk et al. (1980, Exp. Neurol.

30   70:65-82) or Brown et al. (1981, Ann. Rev. Neurosci. 4:17-42); increased production of neuron-associated molecules may be measured by bioassay, enzymatic assay, antibody

binding, Northern blot assay, *etc.*, depending on the molecule to be measured; and motor

neuron dysfunction may be measured by assessing the physical manifestation of motor

neuron disorder, *e.g.*, weakness, motor neuron conduction velocity, or functional

disability.

5   In specific embodiments, motor neuron disorders that may be treated according to

the invention include but are not limited to disorders such as infarction, infection,

exposure to toxin, trauma, surgical damage, degenerative disease or malignancy that may

affect motor neurons as well as other components of the nervous system, as well as

disorders that selectively affect neurons such as amyotrophic lateral sclerosis, and

10   including but not limited to progressive spinal muscular atrophy, progressive bulbar

palsy, primary lateral sclerosis, infantile and juvenile muscular atrophy, progressive

bulbar paralysis of childhood (Fazio-Londe syndrome), poliomyelitis and the post polio

syndrome, and Hereditary Motorsensory Neuropathy (Charcot-Marie-Tooth Disease).

15   **4.10.18   OTHER ACTIVITIES**

A polypeptide of the invention may also exhibit one or more of the following

additional activities or effects: inhibiting the growth, infection or function of, or killing,

infectious agents, including, without limitation, bacteria, viruses, fungi and other

parasites; effecting (suppressing or enhancing) bodily characteristics, including, without

20   limitation, height, weight, hair color, eye color, skin, fat to lean ratio or other tissue

pigmentation, or organ or body part size or shape (such as, for example, breast

augmentation or diminution, change in bone form or shape); effecting biorhythms or

circadian cycles or rhythms; effecting the fertility of male or female subjects; effecting

the metabolism, catabolism, anabolism, processing, utilization, storage or elimination of

25   dietary fat, lipid, protein, carbohydrate, vitamins, minerals, co-factors or other nutritional

factors or component(s); effecting behavioral characteristics, including, without

limitation, appetite, libido, stress, cognition (including cognitive disorders), depression

(including depressive disorders) and violent behaviors; providing analgesic effects or

other pain reducing effects; promoting differentiation and growth of embryonic stem cells

30   in lineages other than hematopoietic lineages; hormonal or endocrine activity; in the case

of enzymes, correcting deficiencies of the enzyme and treating deficiency-related

diseases; treatment of hyperproliferative disorders (such as, for example, psoriasis); immunoglobulin-like activity (such as, for example, the ability to bind antigens or complement); and the ability to act as an antigen in a vaccine composition to raise an immune response against such protein or another material or entity which is

5   cross-reactive with such protein.

4.10.19   IDENTIFICATION OF POLYMORPHISMS

The demonstration of polymorphisms makes possible the identification of such polymorphisms in human subjects and the pharmacogenetic use of this information for

10   diagnosis and treatment. Such polymorphisms may be associated with, e.g., differential predisposition or susceptibility to various disease states (such as disorders involving inflammation or immune response) or a differential response to drug administration, and this genetic information can be used to tailor preventive or therapeutic treatment appropriately. For example, the existence of a polymorphism associated with a

15   predisposition to inflammation or autoimmune disease makes possible the diagnosis of this condition in humans by identifying the presence of the polymorphism.

Polymorphisms can be identified in a variety of ways known in the art which all generally involve obtaining a sample from a patient, analyzing DNA from the sample, optionally involving isolation or amplification of the DNA, and identifying the presence

20   of the polymorphism in the DNA. For example, PCR may be used to amplify an appropriate fragment of genomic DNA which may then be sequenced. Alternatively, the DNA may be subjected to allele-specific oligonucleotide hybridization (in which appropriate oligonucleotides are hybridized to the DNA under conditions permitting detection of a single base mismatch) or to a single nucleotide extension assay (in which

25   an oligonucleotide that hybridizes immediately adjacent to the position of the polymorphism is extended with one or more labeled nucleotides). In addition, traditional restriction fragment length polymorphism analysis (using restriction enzymes that provide differential digestion of the genomic DNA depending on the presence or absence of the polymorphism) may be performed. Arrays with nucleotide sequences of the

30   present invention can be used to detect polymorphisms. The array can comprise modified nucleotide sequences of the present invention in order to detect the nucleotide sequences

of the present invention. In the alternative, any one of the nucleotide sequences of the present invention can be placed on the array to detect changes from those sequences.

Alternatively a polymorphism resulting in a change in the amino acid sequence could also be detected by detecting a corresponding change in amino acid sequence of the protein, e.g., by an antibody specific to the variant sequence.

4.10.20   ARTHRITIS AND INFLAMMATION

The immunosuppressive effects of the compositions of the invention against rheumatoid arthritis is determined in an experimental animal model system. The experimental model system is adjuvant induced arthritis in rats, and the protocol is described by J. Holoshitz, et at., 1983, Science, 219:56, or by B. Waksman et al., 1963, Int. Arch. Allergy Appl. Immunol., 23:129. Induction of the disease can be caused by a single injection, generally intradermally, of a suspension of killed Mycobacterium tuberculosis in complete Freund's adjuvant (CFA). The route of injection can vary, but rats may be injected at the base of the tail with an adjuvant mixture. The polypeptide is administered in phosphate buffered solution (PBS) at a dose of about 1-5 mg/kg. The control consists of administering PBS only.

The procedure for testing the effects of the test compound would consist of intradermally injecting killed Mycobacterium tuberculosis in CFA followed by immediately administering the test compound and subsequent treatment every other day until day 24. At 14, 15, 18, 20, 22, and 24 days after injection of Mycobacterium CFA, an overall arthritis score may be obtained as described by J. Holoskitz above. An analysis of the data would reveal that the test compound would have a dramatic affect on the swelling of the joints as measured by a decrease of the arthritis score.

4.11 THERAPEUTIC METHODS

The compositions (including polypeptide fragments, analogs, variants and antibodies or other binding partners or modulators including antisense polynucleotides) of the invention have numerous applications in a variety of therapeutic methods. Examples of therapeutic applications include, but are not limited to, those exemplified herein.

4.11.1 EXAMPLE

One embodiment of the invention is the administration of an effective amount of the polypeptides or other composition of the invention to individuals affected by a

5   disease or disorder that can be modulated by regulating the peptides of the invention. While the mode of administration is not particularly important, parenteral administration is preferred. An exemplary mode of administration is to deliver an intravenous bolus. The dosage of the polypeptides or other composition of the invention will normally be determined by the prescribing physician. It is to be expected that the dosage will vary

10   according to the age, weight, condition and response of the individual patient. Typically, the amount of polypeptide administered per dose will be in the range of about $0.01\,\mu g/kg$ to 100 mg/kg of body weight, with the preferred dose being about $0.1\,\mu g/kg$ to 10 mg/kg of patient body weight. For parenteral administration, polypeptides of the invention will be formulated in an injectable form combined with a pharmaceutically acceptable

15   parenteral vehicle. Such vehicles are well known in the art and examples include water, saline, Ringer's solution, dextrose solution, and solutions consisting of small amounts of the human serum albumin. The vehicle may contain minor amounts of additives that maintain the isotonicity and stability of the polypeptide or other active ingredient. The preparation of such solutions is within the skill of the art.

20

4.12   PHARMACEUTICAL FORMULATIONS AND ROUTES OF ADMINISTRATION

A protein or other composition of the present invention (from whatever source derived, including without limitation from recombinant and non-recombinant sources and

25   including antibodies and other binding partners of the polypeptides of the invention) may be administered to a patient in need, by itself, or in pharmaceutical compositions where it is mixed with suitable carriers or excipient(s) at doses to treat or ameliorate a variety of disorders. Such a composition may optionally contain (in addition to protein or other active ingredient and a carrier) diluents, fillers, salts, buffers, stabilizers, solubilizers, and

30   other materials well known in the art. The term "pharmaceutically acceptable" means a non-toxic material that does not interfere with the effectiveness of the biological activity

of the active ingredient(s). The characteristics of the carrier will depend on the route of administration. The pharmaceutical composition of the invention may also contain cytokines, lymphokines, or other hematopoietic factors such as M-CSF, GM-CSF, TNF, IL-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-11, IL-12, IL-13, IL-14,

5   IL-15, IFN, TNF0, TNF1, TNF2, G-CSF, Meg-CSF, thrombopoietin, stem cell factor, and erythropoietin. In further compositions, proteins of the invention may be combined with other agents beneficial to the treatment of the disease or disorder in question. These agents include various growth factors such as epidermal growth factor (EGF), platelet-derived growth factor (PDGF), transforming growth factors (TGF-α and TGF-β),

10   insulin-like growth factor (IGF), as well as cytokines described herein.

The pharmaceutical composition may further contain other agents which either enhance the activity of the protein or other active ingredient or complement its activity or use in treatment. Such additional factors and/or agents may be included in the pharmaceutical composition to produce a synergistic effect with protein or other active

15   ingredient of the invention, or to minimize side effects. Conversely, protein or other active ingredient of the present invention may be included in formulations of the particular clotting factor, cytokine, lymphokine, other hematopoietic factor, thrombolytic or anti-thrombotic factor, or anti- inflammatory agent to minimize side effects of the clotting factor, cytokine, lymphokine, other hematopoietic factor, thrombolytic or

20   anti-thrombotic factor, or anti-inflammatory agent (such as IL-1Ra, IL-1 Hy1, IL-1 Hy2, anti-TNF, corticosteroids, immunosuppressive agents). A protein of the present invention may be active in multimers (e.g., heterodimers or homodimers) or complexes with itself or other proteins. As a result, pharmaceutical compositions of the invention may comprise a protein of the invention in such multimeric or complexed form.

25   As an alternative to being included in a pharmaceutical composition of the invention including a first protein, a second protein or a therapeutic agent may be concurrently administered with the first protein (e.g., at the same time, or at differing times provided that therapeutic concentrations of the combination of agents is achieved at the treatment site). Techniques for formulation and administration of the compounds of

30   the instant application may be found in "Remington's Pharmaceutical Sciences," Mack Publishing Co., Easton, PA, latest edition. A therapeutically effective dose further refers

to that amount of the compound sufficient to result in amelioration of symptoms, *e.g.*, treatment, healing, prevention or amelioration of the relevant medical condition, or an increase in rate of treatment, healing, prevention or amelioration of such conditions. When applied to an individual active ingredient, administered alone, a therapeutically

5   effective dose refers to that ingredient alone. When applied to a combination, a therapeutically effective dose refers to combined amounts of the active ingredients that result in the therapeutic effect, whether administered in combination, serially or simultaneously.

In practicing the method of treatment or use of the present invention, a

10   therapeutically effective amount of protein or other active ingredient of the present invention is administered to a mammal having a condition to be treated. Protein or other active ingredient of the present invention may be administered in accordance with the method of the invention either alone or in combination with other therapies such as treatments employing cytokines, lymphokines or other hematopoietic factors. When co-

15   administered with one or more cytokines, lymphokines or other hematopoietic factors, protein or other active ingredient of the present invention may be administered either simultaneously with the cytokine(s), lymphokine(s), other hematopoietic factor(s), thrombolytic or anti-thrombotic factors, or sequentially. If administered sequentially, the attending physician will decide on the appropriate sequence of administering protein or

20   other active ingredient of the present invention in combination with cytokine(s), lymphokine(s), other hematopoietic factor(s), thrombolytic or anti-thrombotic factors.

4.12.1 ROUTES OF ADMINISTRATION

Suitable routes of administration may, for example, include oral, rectal,

25   transmucosal, or intestinal administration; parenteral delivery, including intramuscular, subcutaneous, intramedullary injections, as well as intrathecal, direct intraventricular, intravenous, intraperitoneal, intranasal, or intraocular injections. Administration of protein or other active ingredient of the present invention used in the pharmaceutical composition or to practice the method of the present invention can be carried out in a

30   variety of conventional ways, such as oral ingestion, inhalation, topical application or

cutaneous, subcutaneous, intraperitoneal, parenteral or intravenous injection. Intravenous administration to the patient is preferred.

Alternately, one may administer the compound in a local rather than systemic manner, for example, via injection of the compound directly into a arthritic joints or in
5   fibrotic tissue, often in a depot or sustained release formulation. In order to prevent the scarring process frequently occurring as complication of glaucoma surgery, the compounds may be administered topically, for example, as eye drops. Furthermore, one may administer the drug in a targeted drug delivery system, for example, in a liposome coated with a specific antibody, targeting, for example, arthritic or fibrotic tissue. The
10 liposomes will be targeted to and taken up selectively by the afflicted tissue.

The polypeptides of the invention are administered by any route that delivers an effective dosage to the desired site of action. The determination of a suitable route of administration and an effective dosage for a particular indication is within the level of skill in the art. Preferably for wound treatment, one administers the therapeutic
15 compound directly to the site. Suitable dosage ranges for the polypeptides of the invention can be extrapolated from these dosages or from similar studies in appropriate animal models. Dosages can then be adjusted as necessary by the clinician to provide maximal therapeutic benefit.

20   **4.12.2 COMPOSITIONS/FORMULATIONS**
Pharmaceutical compositions for use in accordance with the present invention thus may be formulated in a conventional manner using one or more physiologically acceptable carriers comprising excipients and auxiliaries which facilitate processing of the active compounds into preparations which can be used pharmaceutically. These
25 pharmaceutical compositions may be manufactured in a manner that is itself known, *e.g.*, by means of conventional mixing, dissolving, granulating, dragee-making, levigating, emulsifying, encapsulating, entrapping or lyophilizing processes. Proper formulation is dependent upon the route of administration chosen. When a therapeutically effective amount of protein or other active ingredient of the present invention is administered
30 orally, protein or other active ingredient of the present invention will be in the form of a tablet, capsule, powder, solution or elixir. When administered in tablet form, the

pharmaceutical composition of the invention may additionally contain a solid carrier such as a gelatin or an adjuvant. The tablet, capsule, and powder contain from about 5 to 95% protein or other active ingredient of the present invention, and preferably from about 25 to 90% protein or other active ingredient of the present invention. When administered in

5   liquid form, a liquid carrier such as water, petroleum, oils of animal or plant origin such as peanut oil, mineral oil, soybean oil, or sesame oil, or synthetic oils may be added. The liquid form of the pharmaceutical composition may further contain physiological saline solution, dextrose or other saccharide solution, or glycols such as ethylene glycol, propylene glycol or polyethylene glycol. When administered in liquid form, the

10   pharmaceutical composition contains from about 0.5 to 90% by weight of protein or other active ingredient of the present invention, and preferably from about 1 to 50% protein or other active ingredient of the present invention.

When a therapeutically effective amount of protein or other active ingredient of the present invention is administered by intravenous, cutaneous or subcutaneous

15   injection, protein or other active ingredient of the present invention will be in the form of a pyrogen-free, parenterally acceptable aqueous solution. The preparation of such parenterally acceptable protein or other active ingredient solutions, having due regard to pH, isotonicity, stability, and the like, is within the skill in the art. A preferred pharmaceutical composition for intravenous, cutaneous, or subcutaneous injection should

20   contain, in addition to protein or other active ingredient of the present invention, an isotonic vehicle such as Sodium Chloride Injection, Ringer's Injection, Dextrose Injection, Dextrose and Sodium Chloride Injection, Lactated Ringer's Injection, or other vehicle as known in the art. The pharmaceutical composition of the present invention may also contain stabilizers, preservatives, buffers, antioxidants, or other additives

25   known to those of skill in the art. For injection, the agents of the invention may be formulated in aqueous solutions, preferably in physiologically compatible buffers such as Hanks's solution, Ringer's solution, or physiological saline buffer. For transmucosal administration, penetrants appropriate to the barrier to be permeated are used in the formulation. Such penetrants are generally known in the art.

30   For oral administration, the compounds can be formulated readily by combining the active compounds with pharmaceutically acceptable carriers well known in the art.

Such carriers enable the compounds of the invention to be formulated as tablets, pills, dragees, capsules, liquids, gels, syrups, slurries, suspensions and the like, for oral ingestion by a patient to be treated. Pharmaceutical preparations for oral use can be obtained from a solid excipient, optionally grinding a resulting mixture, and processing

5   the mixture of granules, after adding suitable auxiliaries, if desired, to obtain tablets or dragee cores. Suitable excipients are, in particular, fillers such as sugars, including lactose, sucrose, mannitol, or sorbitol; cellulose preparations such as, for example, maize starch, wheat starch, rice starch, potato starch, gelatin, gum tragacanth, methyl cellulose, hydroxypropylmethyl-cellulose, sodium carboxymethylcellulose, and/or

10   polyvinylpyrrolidone (PVP). If desired, disintegrating agents may be added, such as the cross-linked polyvinyl pyrrolidone, agar, or alginic acid or a salt thereof such as sodium alginate. Dragee cores are provided with suitable coatings. For this purpose, concentrated sugar solutions may be used, which may optionally contain gum arabic, talc, polyvinyl pyrrolidone, carbopol gel, polyethylene glycol, and/or titanium dioxide, lacquer

15   solutions, and suitable organic solvents or solvent mixtures. Dyestuffs or pigments may be added to the tablets or dragee coatings for identification or to characterize different combinations of active compound doses.

       Pharmaceutical preparations which can be used orally include push-fit capsules made of gelatin, as well as soft, sealed capsules made of gelatin and a plasticizer, such as

20   glycerol or sorbitol. The push-fit capsules can contain the active ingredients in admixture with filler such as lactose, binders such as starches, and/or lubricants such as talc or magnesium stearate and, optionally, stabilizers. In soft capsules, the active compounds may be dissolved or suspended in suitable liquids, such as fatty oils, liquid paraffin, or liquid polyethylene glycols. In addition, stabilizers may be added. All formulations for

25   oral administration should be in dosages suitable for such administration. For buccal administration, the compositions may take the form of tablets or lozenges formulated in conventional manner.

       For administration by inhalation, the compounds for use according to the present invention are conveniently delivered in the form of an aerosol spray presentation from

30   pressurized packs or a nebuliser, with the use of a suitable propellant, e.g., dichlorodifluoromethane, trichlorofluoromethane, dichlorotetrafluoroethane, carbon

dioxide or other suitable gas. In the case of a pressurized aerosol the dosage unit may be determined by providing a valve to deliver a metered amount. Capsules and cartridges of, *e.g.*, gelatin for use in an inhaler or insufflator may be formulated containing a powder mix of the compound and a suitable powder base such as lactose or starch. The

5   compounds may be formulated for parenteral administration by injection, *e.g.*, by bolus injection or continuous infusion. Formulations for injection may be presented in unit dosage form, *e.g.*, in ampules or in multi-dose containers, with an added preservative. The compositions may take such forms as suspensions, solutions or emulsions in oily or aqueous vehicles, and may contain formulatory agents such as suspending, stabilizing

10   and/or dispersing agents.

Pharmaceutical formulations for parenteral administration include aqueous solutions of the active compounds in water-soluble form. Additionally, suspensions of the active compounds may be prepared as appropriate oily injection suspensions. Suitable lipophilic solvents or vehicles include fatty oils such as sesame oil, or synthetic

15   fatty acid esters, such as ethyl oleate or triglycerides, or liposomes. Aqueous injection suspensions may contain substances which increase the viscosity of the suspension, such as sodium carboxymethyl cellulose, sorbitol, or dextran. Optionally, the suspension may also contain suitable stabilizers or agents which increase the solubility of the compounds to allow for the preparation of highly concentrated solutions. Alternatively, the active

20   ingredient may be in powder form for constitution with a suitable vehicle, *e.g.*, sterile pyrogen-free water, before use.

The compounds may also be formulated in rectal compositions such as suppositories or retention enemas, *e.g.*, containing conventional suppository bases such as cocoa butter or other glycerides. In addition to the formulations described previously, the

25   compounds may also be formulated as a depot preparation. Such long acting formulations may be administered by implantation (for example subcutaneously or intramuscularly) or by intramuscular injection. Thus, for example, the compounds may be formulated with suitable polymeric or hydrophobic materials (for example as an emulsion in an acceptable oil) or ion exchange resins, or as sparingly soluble derivatives,

30   for example, as a sparingly soluble salt.

A pharmaceutical carrier for the hydrophobic compounds of the invention is a co-solvent system comprising benzyl alcohol, a nonpolar surfactant, a water-miscible organic polymer, and an aqueous phase. The co-solvent system may be the VPD co-solvent system. VPD is a solution of 3% w/v benzyl alcohol, 8% w/v of the nonpolar surfactant polysorbate 80, and 65% w/v polyethylene glycol 300, made up to volume in absolute ethanol. The VPD co-solvent system (VPD:5W) consists of VPD diluted 1:1 with a 5% dextrose in water solution. This co-solvent system dissolves hydrophobic compounds well, and itself produces low toxicity upon systemic administration. Naturally, the proportions of a co-solvent system may be varied considerably without destroying its solubility and toxicity characteristics. Furthermore, the identity of the co-solvent components may be varied: for example, other low-toxicity nonpolar surfactants may be used instead of polysorbate 80; the fraction size of polyethylene glycol may be varied; other biocompatible polymers may replace polyethylene glycol, e.g. polyvinyl pyrrolidone; and other sugars or polysaccharides may substitute for dextrose. Alternatively, other delivery systems for hydrophobic pharmaceutical compounds may be employed. Liposomes and emulsions are well known examples of delivery vehicles or carriers for hydrophobic drugs. Certain organic solvents such as dimethylsulfoxide also may be employed, although usually at the cost of greater toxicity. Additionally, the compounds may be delivered using a sustained-release system, such as semipermeable matrices of solid hydrophobic polymers containing the therapeutic agent. Various types of sustained-release materials have been established and are well known by those skilled in the art. Sustained-release capsules may, depending on their chemical nature, release the compounds for a few weeks up to over 100 days. Depending on the chemical nature and the biological stability of the therapeutic reagent, additional strategies for protein or other active ingredient stabilization may be employed.

The pharmaceutical compositions also may comprise suitable solid or gel phase carriers or excipients. Examples of such carriers or excipients include but are not limited to calcium carbonate, calcium phosphate, various sugars, starches, cellulose derivatives, gelatin, and polymers such as polyethylene glycols. Many of the active ingredients of the invention may be provided as salts with pharmaceutically compatible counter ions. Such pharmaceutically acceptable base addition salts are those salts which retain the biological

effectiveness and properties of the free acids and which are obtained by reaction with inorganic or organic bases such as sodium hydroxide, magnesium hydroxide, ammonia, trialkylamine, dialkylamine, monoalkylamine, dibasic amino acids, sodium acetate, potassium benzoate, triethanol amine and the like.

5   The pharmaceutical composition of the invention may be in the form of a complex of the protein(s) or other active ingredient(s) of present invention along with protein or peptide antigens. The protein and/or peptide antigen will deliver a stimulatory signal to both B and T lymphocytes. B lymphocytes will respond to antigen through their surface immunoglobulin receptor. T lymphocytes will respond to antigen through the T
10   cell receptor (TCR) following presentation of the antigen by MHC proteins. MHC and structurally related proteins including those encoded by class I and class II MHC genes on host cells will serve to present the peptide antigen(s) to T lymphocytes. The antigen components could also be supplied as purified MHC-peptide complexes alone or with co-stimulatory molecules that can directly signal T cells. Alternatively antibodies able to
15   bind surface immunoglobulin and other molecules on B cells as well as antibodies able to bind the TCR and other molecules on T cells can be combined with the pharmaceutical composition of the invention.

        The pharmaceutical composition of the invention may be in the form of a liposome in which protein of the present invention is combined, in addition to other
20   pharmaceutically acceptable carriers, with amphipathic agents such as lipids which exist in aggregated form as micelles, insoluble monolayers, liquid crystals, or lamellar layers in aqueous solution. Suitable lipids for liposomal formulation include, without limitation, monoglycerides, diglycerides, sulfatides, lysolecithins, phospholipids, saponin, bile acids, and the like. Preparation of such liposomal formulations is within the level of skill in the
25   art, as disclosed, for example, in U.S. Patent Nos. 4,235,871; 4,501,728; 4,837,028; and 4,737,323, all of which are incorporated herein by reference.

        The amount of protein or other active ingredient of the present invention in the pharmaceutical composition of the present invention will depend upon the nature and severity of the condition being treated, and on the nature of prior treatments which the
30   patient has undergone. Ultimately, the attending physician will decide the amount of protein or other active ingredient of the present invention with which to treat each

individual patient. Initially, the attending physician will administer low doses of protein or other active ingredient of the present invention and observe the patient's response. Larger doses of protein or other active ingredient of the present invention may be administered until the optimal therapeutic effect is obtained for the patient, and at that

5   point the dosage is not increased further. It is contemplated that the various pharmaceutical compositions used to practice the method of the present invention should contain about 0.01 µg to about 100 mg (preferably about 0.1 µg to about 10 mg, more preferably about 0.1 µg to about 1 mg) of protein or other active ingredient of the present invention per kg body weight. For compositions of the present invention which are

10   useful for bone, cartilage, tendon or ligament regeneration, the therapeutic method includes administering the composition topically, systematically, or locally as an implant or device. When administered, the therapeutic composition for use in this invention is, of course, in a pyrogen-free, physiologically acceptable form. Further, the composition may desirably be encapsulated or injected in a viscous form for delivery to the site of bone,

15   cartilage or tissue damage. Topical administration may be suitable for wound healing and tissue repair. Therapeutically useful agents other than a protein or other active ingredient of the invention which may also optionally be included in the composition as described above, may alternatively or additionally, be administered simultaneously or sequentially with the composition in the methods of the invention. Preferably for bone

20   and/or cartilage formation, the composition would include a matrix capable of delivering the protein-containing or other active ingredient-containing composition to the site of bone and/or cartilage damage, providing a structure for the developing bone and cartilage and optimally capable of being resorbed into the body. Such matrices may be formed of materials presently in use for other implanted medical applications.

25   The choice of matrix material is based on biocompatibility, biodegradability, mechanical properties, cosmetic appearance and interface properties. The particular application of the compositions will define the appropriate formulation. Potential matrices for the compositions may be biodegradable and chemically defined calcium sulfate, tricalcium phosphate, hydroxyapatite, polylactic acid, polyglycolic acid and

30   polyanhydrides. Other potential materials are biodegradable and biologically well-defined, such as bone or dermal collagen. Further matrices are comprised of pure

proteins or extracellular matrix components. Other potential matrices are nonbiodegradable and chemically defined, such as sintered hydroxyapatite, bioglass, aluminates, or other ceramics. Matrices may be comprised of combinations of any of the above mentioned types of material, such as polylactic acid and hydroxyapatite or

5   collagen and tricalcium phosphate. The bioceramics may be altered in composition, such as in calcium-aluminate-phosphate and processing to alter pore size, particle size, particle shape, and biodegradability. Presently preferred is a 50:50 (mole weight) copolymer of lactic acid and glycolic acid in the form of porous particles having diameters ranging from 150 to 800 microns. In some applications, it will be useful to utilize a sequestering

10   agent, such as carboxymethyl cellulose or autologous blood clot, to prevent the protein compositions from disassociating from the matrix.

A preferred family of sequestering agents is cellulosic materials such as alkylcelluloses (including hydroxyalkylcelluloses), including methylcellulose, ethylcellulose, hydroxyethylcellulose, hydroxypropylcellulose,

15   hydroxypropyl-methylcellulose, and carboxymethylcellulose, the most preferred being cationic salts of carboxymethylcellulose (CMC). Other preferred sequestering agents include hyaluronic acid, sodium alginate, poly(ethylene glycol), polyoxyethylene oxide, carboxyvinyl polymer and poly(vinyl alcohol). The amount of sequestering agent useful herein is 0.5-20 wt %, preferably 1-10 wt % based on total formulation weight, which

20   represents the amount necessary to prevent desorption of the protein from the polymer matrix and to provide appropriate handling of the composition, yet not so much that the progenitor cells are prevented from infiltrating the matrix, thereby providing the protein the opportunity to assist the osteogenic activity of the progenitor cells. In further compositions, proteins or other active ingredients of the invention may be combined with

25   other agents beneficial to the treatment of the bone and/or cartilage defect, wound, or tissue in question. These agents include various growth factors such as epidermal growth factor (EGF), platelet derived growth factor (PDGF), transforming growth factors (TGF-α and TGF-β), and insulin-like growth factor (IGF).

The therapeutic compositions are also presently valuable for veterinary

30   applications. Particularly domestic animals and thoroughbred horses, in addition to humans, are desired patients for such treatment with proteins or other active ingredients

of the present invention. The dosage regimen of a protein-containing pharmaceutical composition to be used in tissue regeneration will be determined by the attending physician considering various factors which modify the action of the proteins, *e.g.,* amount of tissue weight desired to be formed, the site of damage, the condition of the

5   damaged tissue, the size of a wound, type of damaged tissue (*e.g.,* bone), the patient's age, sex, and diet, the severity of any infection, time of administration and other clinical factors. The dosage may vary with the type of matrix used in the reconstitution and with inclusion of other proteins in the pharmaceutical composition. For example, the addition of other known growth factors, such as IGF I (insulin like growth factor I), to the final

10   composition, may also effect the dosage. Progress can be monitored by periodic assessment of tissue/bone growth and/or repair, for example, X-rays, histomorphometric determinations and tetracycline labeling.

        Polynucleotides of the present invention can also be used for gene therapy. Such polynucleotides can be introduced either in vivo or ex vivo into cells for expression in a

15   mammalian subject. Polynucleotides of the invention may also be administered by other known methods for introduction of nucleic acid into a cell or organism (including, without limitation, in the form of viral vectors or naked DNA). Cells may also be cultured ex vivo in the presence of proteins of the present invention in order to proliferate or to produce a desired effect on or activity in such cells. Treated cells can then be

20   introduced in vivo for therapeutic purposes.

        4.12.3 EFFECTIVE DOSAGE

        Pharmaceutical compositions suitable for use in the present invention include compositions wherein the active ingredients are contained in an effective amount to

25   achieve its intended purpose. More specifically, a therapeutically effective amount means an amount effective to prevent development of or to alleviate the existing symptoms of the subject being treated. Determination of the effective amount is well within the capability of those skilled in the art, especially in light of the detailed disclosure provided herein. For any compound used in the method of the invention, the

30   therapeutically effective dose can be estimated initially from appropriate in vitro assays. For example, a dose can be formulated in animal models to achieve a circulating

concentration range that can be used to more accurately determine useful doses in humans. For example, a dose can be formulated in animal models to achieve a circulating concentration range that includes the IC_{50} as determined in cell culture (*i.e.*, the concentration of the test compound which achieves a half-maximal inhibition of the

5   protein's biological activity). Such information can be used to more accurately determine useful doses in humans.

A therapeutically effective dose refers to that amount of the compound that results in amelioration of symptoms or a prolongation of survival in a patient. Toxicity and therapeutic efficacy of such compounds can be determined by standard pharmaceutical

10 procedures in cell cultures or experimental animals, *e.g.*, for determining the LD_{50} (the dose lethal to 50% of the population) and the ED_{50} (the dose therapeutically effective in 50% of the population). The dose ratio between toxic and therapeutic effects is the therapeutic index and it can be expressed as the ratio between LD_{50} and ED_{50}. Compounds which exhibit high therapeutic indices are preferred. The data obtained from

15 these cell culture assays and animal studies can be used in formulating a range of dosage for use in human. The dosage of such compounds lies preferably within a range of circulating concentrations that include the ED_{50} with little or no toxicity. The dosage may vary within this range depending upon the dosage form employed and the route of administration utilized. The exact formulation, route of administration and dosage can be

20 chosen by the individual physician in view of the patient's condition. See, *e.g.*, Fingl et al., 1975, in "The Pharmacological Basis of Therapeutics", Ch. 1 p.1. Dosage amount and interval may be adjusted individually to provide plasma levels of the active moiety which are sufficient to maintain the desired effects, or minimal effective concentration (MEC). The MEC will vary for each compound but can be estimated from *in vitro* data.

25 Dosages necessary to achieve the MEC will depend on individual characteristics and route of administration. However, HPLC assays or bioassays can be used to determine plasma concentrations.

Dosage intervals can also be determined using MEC value. Compounds should be administered using a regimen which maintains plasma levels above the MEC for

30 10-90% of the time, preferably between 30-90% and most preferably between 50-90%.

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In cases of local administration or selective uptake, the effective local concentration of the drug may not be related to plasma concentration.

An exemplary dosage regimen for polypeptides or other compositions of the invention will be in the range of about 0.01 µg/kg to 100 mg/kg of body weight daily,

5   with the preferred dose being about 0.1 µg/kg to 25 mg/kg of patient body weight daily, varying in adults and children. Dosing may be once daily, or equivalent doses may be delivered at longer or shorter intervals.

The amount of composition administered will, of course, be dependent on the subject being treated, on the subject's age and weight, the severity of the affliction, the

10   manner of administration and the judgment of the prescribing physician.

4.12.4 PACKAGING

The compositions may, if desired, be presented in a pack or dispenser device which may contain one or more unit dosage forms containing the active ingredient. The

15   pack may, for example, comprise metal or plastic foil, such as a blister pack. The pack or dispenser device may be accompanied by instructions for administration. Compositions comprising a compound of the invention formulated in a compatible pharmaceutical carrier may also be prepared, placed in an appropriate container, and labeled for treatment of an indicated condition.

20

4.13 ANTIBODIES

Also included in the invention are antibodies to proteins, or fragments of proteins of the invention. The term "antibody" as used herein refers to immunoglobulin molecules and immunologically active portions of immunoglobulin (Ig) molecules, i.e., molecules

25   that contain an antigen binding site that specifically binds (immunoreacts with) an antigen. Such antibodies include, but are not limited to, polyclonal, monoclonal, chimeric, single chain, F_{ab}, $F_{ab'}$ and $F_{(ab')2}$ fragments, and an F_{ab} expression library. In general, an antibody molecule obtained from humans relates to any of the classes IgG, IgM, IgA, IgE and IgD, which differ from one another by the nature of the heavy chain

30   present in the molecule. Certain classes have subclasses as well, such as IgG_1, IgG_2, and others. Furthermore, in humans, the light chain may be a kappa chain or a lambda chain.

Reference herein to antibodies includes a reference to all such classes, subclasses and types of human antibody species.

An isolated related protein of the invention may be intended to serve as an antigen, or a portion or fragment thereof, and additionally can be used as an immunogen to generate antibodies that immunospecifically bind the antigen, using standard techniques for polyclonal and monoclonal antibody preparation. The full-length protein can be used or, alternatively, the invention provides antigenic peptide fragments of the antigen for use as immunogens. An antigenic peptide fragment comprises at least 6 amino acid residues of the amino acid sequence of the full length protein, such as an amino acid sequence shown in SEQ ID NO: 4, and encompasses an epitope thereof such that an antibody raised against the peptide forms a specific immune complex with the full length protein or with any fragment that contains the epitope. Preferably, the antigenic peptide comprises at least 10 amino acid residues, or at least 15 amino acid residues, or at least 20 amino acid residues, or at least 30 amino acid residues. Preferred epitopes encompassed by the antigenic peptide are regions of the protein that are located on its surface; commonly these are hydrophilic regions.

In certain embodiments of the invention, at least one epitope encompassed by the antigenic peptide is a region of -related protein that is located on the surface of the protein, e.g., a hydrophilic region. A hydrophobicity analysis of the human related protein sequence will indicate which regions of a related protein are particularly hydrophilic and, therefore, are likely to encode surface residues useful for targeting antibody production. As a means for targeting antibody production, hydropathy plots showing regions of hydrophilicity and hydrophobicity may be generated by any method well known in the art, including, for example, the Kyte Doolittle or the Hopp Woods methods, either with or without Fourier transformation. See, e.g., Hopp and Woods, 1981, *Proc. Nat. Acad. Sci. USA* 78: 3824-3828; Kyte and Doolittle 1982, *J. Mol. Biol.* 157: 105-142, each of which is incorporated herein by reference in its entirety. Antibodies that are specific for one or more domains within an antigenic protein, or derivatives, fragments, analogs or homologs thereof, are also provided herein.

A protein of the invention, or a derivative, fragment, analog, homolog or ortholog thereof, may be utilized as an immunogen in the generation of antibodies that immunospecifically bind these protein components.

Various procedures known within the art may be used for the production of
5   polyclonal or monoclonal antibodies directed against a protein of the invention, or against derivatives, fragments, analogs homologs or orthologs thereof (see, for example, Antibodies: A Laboratory Manual, Harlow E, and Lane D, 1988, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY, incorporated herein by reference). Some of these antibodies are discussed below.
10

5.13.1 Polyclonal Antibodies

For the production of polyclonal antibodies, various suitable host animals (e.g., rabbit, goat, mouse or other mammal) may be immunized by one or more injections with the native protein, a synthetic variant thereof, or a derivative of the foregoing. An
15   appropriate immunogenic preparation can contain, for example, the naturally occurring immunogenic protein, a chemically synthesized polypeptide representing the immunogenic protein, or a recombinantly expressed immunogenic protein. Furthermore, the protein may be conjugated to a second protein known to be immunogenic in the mammal being immunized. Examples of such immunogenic proteins include but are not
20   limited to keyhole limpet hemocyanin, serum albumin, bovine thyroglobulin, and soybean trypsin inhibitor. The preparation can further include an adjuvant. Various adjuvants used to increase the immunological response include, but are not limited to, Freund's (complete and incomplete), mineral gels (e.g., aluminum hydroxide), surface active substances (e.g., lysolecithin, pluronic polyols, polyanions, peptides, oil emulsions,
25   dinitrophenol, etc.), adjuvants usable in humans such as Bacille Calmette-Guerin and Corynebacterium parvum, or similar immunostimulatory agents. Additional examples of adjuvants which can be employed include MPL-TDM adjuvant (monophosphoryl Lipid A, synthetic trehalose dicorynomycolate).

The polyclonal antibody molecules directed against the immunogenic protein can
30   be isolated from the mammal (e.g., from the blood) and further purified by well known techniques, such as affinity chromatography using protein A or protein G, which provide

primarily the IgG fraction of immune serum. Subsequently, or alternatively, the specific

antigen which is the target of the immunoglobulin sought, or an epitope thereof, may be

immobilized on a column to purify the immune specific antibody by immunoaffinity

chromatography. Purification of immunoglobulins is discussed, for example, by D.

5   Wilkinson (The Scientist, published by The Scientist, Inc., Philadelphia PA, Vol. 14, No.

8 (April 17, 2000), pp. 25-28).

5.13.2 Monoclonal Antibodies

The term "monoclonal antibody" (MAb) or "monoclonal antibody composition",

10   as used herein, refers to a population of antibody molecules that contain only one

molecular species of antibody molecule consisting of a unique light chain gene product

and a unique heavy chain gene product. In particular, the complementarity determining

regions (CDRs) of the monoclonal antibody are identical in all the molecules of the

population. MAbs thus contain an antigen binding site capable of immunoreacting with a

15   particular epitope of the antigen characterized by a unique binding affinity for it.

Monoclonal antibodies can be prepared using hybridoma methods, such as those

described by Kohler and Milstein, Nature, 256:495 (1975). In a hybridoma method, a

mouse, hamster, or other appropriate host animal, is typically immunized with an

immunizing agent to elicit lymphocytes that produce or are capable of producing

20   antibodies that will specifically bind to the immunizing agent. Alternatively, the

lymphocytes can be immunized in vitro.

The immunizing agent will typically include the protein antigen, a fragment thereof or a

fusion protein thereof. Generally, either peripheral blood lymphocytes are used if cells of

human origin are desired, or spleen cells or lymph node cells are used if non-human

25   mammalian sources are desired. The lymphocytes are then fused with an immortalized

cell line using a suitable fusing agent, such as polyethylene glycol, to form a hybridoma

cell (Goding, Monoclonal Antibodies: Principles and Practice, Academic Press, (1986)

pp. 59-103). Immortalized cell lines are usually transformed mammalian cells,

particularly myeloma cells of rodent, bovine and human origin. Usually, rat or mouse

30   myeloma cell lines are employed. The hybridoma cells can be cultured in a suitable

culture medium that preferably contains one or more substances that inhibit the growth or

survival of the unfused, immortalized cells. For example, if the parental cells lack the enzyme hypoxanthine guanine phosphoribosyl transferase (HGPRT or HPRT), the culture medium for the hybridomas typically will include hypoxanthine, aminopterin, and thymidine ("HAT medium"), which substances prevent the growth of HGPRT-deficient

5   cells.

        Preferred immortalized cell lines are those that fuse efficiently, support stable high level expression of antibody by the selected antibody-producing cells, and are sensitive to a medium such as HAT medium. More preferred immortalized cell lines are murine myeloma lines, which can be obtained, for instance, from the Salk Institute Cell

10   Distribution Center, San Diego, California and the American Type Culture Collection, Manassas, Virginia. Human myeloma and mouse-human heteromyeloma cell lines also have been described for the production of human monoclonal antibodies (Kozbor, J. Immunol., 133:3001 (1984); Brodeur et al., Monoclonal Antibody Production Techniques and Applications, Marcel Dekker, Inc., New York, (1987) pp. 51-63).

15   The culture medium in which the hybridoma cells are cultured can then be assayed for the presence of monoclonal antibodies directed against the antigen. Preferably, the binding specificity of monoclonal antibodies produced by the hybridoma cells is determined by immunoprecipitation or by an in vitro binding assay, such as radioimmunoassay (RIA) or enzyme-linked immunoabsorbent assay (ELISA). Such

20   techniques and assays are known in the art. The binding affinity of the monoclonal antibody can, for example, be determined by the Scatchard analysis of Munson and Pollard, Anal. Biochem., 107:220 (1980). Preferably, antibodies having a high degree of specificity and a high binding affinity for the target antigen are isolated.

        After the desired hybridoma cells are identified, the clones can be subcloned by

25   limiting dilution procedures and grown by standard methods. Suitable culture media for this purpose include, for example, Dulbecco's Modified Eagle's Medium and RPMI-1640 medium. Alternatively, the hybridoma cells can be grown in vivo as ascites in a mammal.

        The monoclonal antibodies secreted by the subclones can be isolated or purified from the

30   culture medium or ascites fluid by conventional immunoglobulin purification procedures

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such as, for example, protein A-Sepharose, hydroxylapatite chromatography, gel electrophoresis, dialysis, or affinity chromatography.

The monoclonal antibodies can also be made by recombinant DNA methods, such as those described in U.S. Patent No. 4,816,567. DNA encoding the monoclonal

5   antibodies of the invention can be readily isolated and sequenced using conventional procedures (e.g., by using oligonucleotide probes that are capable of binding specifically to genes encoding the heavy and light chains of murine antibodies). The hybridoma cells of the invention serve as a preferred source of such DNA. Once isolated, the DNA can be placed into expression vectors, which are then transfected into host cells such as

10   simian COS cells, Chinese hamster ovary (CHO) cells, or myeloma cells that do not otherwise produce immunoglobulin protein, to obtain the synthesis of monoclonal antibodies in the recombinant host cells. The DNA also can be modified, for example, by substituting the coding sequence for human heavy and light chain constant domains in place of the homologous murine sequences (U.S. Patent No. 4,816,567; Morrison, <u>Nature</u>

15   <u>368</u>, 812-13 (1994)) or by covalently joining to the immunoglobulin coding sequence all or part of the coding sequence for a non-immunoglobulin polypeptide. Such a non-immunoglobulin polypeptide can be substituted for the constant domains of an antibody of the invention, or can be substituted for the variable domains of one antigen-combining site of an antibody of the invention to create a chimeric bivalent antibody.

20

5.13.2 Humanized Antibodies

The antibodies directed against the protein antigens of the invention can further comprise humanized antibodies or human antibodies. These antibodies are suitable for administration to humans without engendering an immune response by the human against

25   the administered immunoglobulin. Humanized forms of antibodies are chimeric immunoglobulins, immunoglobulin chains or fragments thereof (such as Fv, Fab, Fab', F(ab')$_2$ or other antigen-binding subsequences of antibodies) that are principally comprised of the sequence of a human immunoglobulin, and contain minimal sequence derived from a non-human immunoglobulin. Humanization can be performed following

30   the method of Winter and co-workers (Jones et al., <u>Nature</u>, <u>321</u>:522-525 (1986); Riechmann et al., <u>Nature</u>, <u>332</u>:323-327 (1988); Verhoeyen et al., <u>Science</u>, <u>239</u>:1534-1536

(1988)), by substituting rodent CDRs or CDR sequences for the corresponding sequences of a human antibody. (See also U.S. Patent No. 5,225,539.) In some instances, Fv framework residues of the human immunoglobulin are replaced by corresponding non-human residues. Humanized antibodies can also comprise residues which are found

5   neither in the recipient antibody nor in the imported CDR or framework sequences. In general, the humanized antibody will comprise substantially all of at least one, and typically two, variable domains, in which all or substantially all of the CDR regions correspond to those of a non-human immunoglobulin and all or substantially all of the framework regions are those of a human immunoglobulin consensus sequence. The

10   humanized antibody optimally also will comprise at least a portion of an immunoglobulin constant region (Fc), typically that of a human immunoglobulin (Jones et al., 1986; Riechmann et al., 1988; and Presta, Curr. Op. Struct. Biol., 2:593-596 (1992)).

5.13.3 Human Antibodies

15   Fully human antibodies relate to antibody molecules in which essentially the entire sequences of both the light chain and the heavy chain, including the CDRs, arise from human genes. Such antibodies are termed "human antibodies", or "fully human antibodies" herein. Human monoclonal antibodies can be prepared by the trioma technique; the human B-cell hybridoma technique (see Kozbor, et al., 1983 Immunol

20   Today 4: 72) and the EBV hybridoma technique to produce human monoclonal antibodies (see Cole, et al., 1985 In: MONOCLONAL ANTIBODIES AND CANCER THERAPY, Alan R. Liss, Inc., pp. 77-96). Human monoclonal antibodies may be utilized in the practice of the present invention and may be produced by using human hybridomas (see Cote, et al., 1983. Proc Natl Acad Sci USA 80: 2026-2030) or by transforming human

25   B-cells with Epstein Barr Virus in vitro (see Cole, et al., 1985 In: MONOCLONAL ANTIBODIES AND CANCER THERAPY, Alan R. Liss, Inc.; pp. 77-96).

In addition, human antibodies can also be produced using additional techniques, including phage display libraries (Hoogenboom and Winter, J. Mol. Biol., 227:381 (1991); Marks et al., J. Mol. Biol., 222:581 (1991)). Similarly, human antibodies can be

30   made by introducing human immunoglobulin loci into transgenic animals, e.g., mice in which the endogenous immunoglobulin genes have been partially or completely

inactivated. Upon challenge, human antibody production is observed, which closely resembles that seen in humans in all respects, including gene rearrangement, assembly, and antibody repertoire. This approach is described, for example, in U.S. Patent Nos. 5,545,807; 5,545,806; 5,569,825; 5,625,126; 5,633,425; 5,661,016, and in Marks et al.

5   (Bio/Technology 10, 779-783 (1992)); Lonberg et al. (Nature 368 856-859 (1994)); Morrison (Nature 368, 812-13 (1994)); Fishwild et al,(Nature Biotechnology 14, 845-51 (1996)); Neuberger (Nature Biotechnology 14, 826 (1996)); and Lonberg and Huszar (Intern. Rev. Immunol. 13 65-93 (1995)).

Human antibodies may additionally be produced using transgenic nonhuman

10   animals which are modified so as to produce fully human antibodies rather than the animal's endogenous antibodies in response to challenge by an antigen. (See PCT publication WO94/02602). The endogenous genes encoding the heavy and light immunoglobulin chains in the nonhuman host have been incapacitated, and active loci encoding human heavy and light chain immunoglobulins are inserted into the host's

15   genome. The human genes are incorporated, for example, using yeast artificial chromosomes containing the requisite human DNA segments. An animal which provides all the desired modifications is then obtained as progeny by crossbreeding intermediate transgenic animals containing fewer than the full complement of the modifications. The preferred embodiment of such a nonhuman animal is a mouse, and is termed the

20   Xenomouse™ as disclosed in PCT publications WO 96/33735 and WO 96/34096. This animal produces B cells which secrete fully human immunoglobulins. The antibodies can be obtained directly from the animal after immunization with an immunogen of interest, as, for example, a preparation of a polyclonal antibody, or alternatively from immortalized B cells derived from the animal, such as hybridomas producing monoclonal

25   antibodies. Additionally, the genes encoding the immunoglobulins with human variable regions can be recovered and expressed to obtain the antibodies directly, or can be further modified to obtain analogs of antibodies such as, for example, single chain Fv molecules.

An example of a method of producing a nonhuman host, exemplified as a mouse, lacking expression of an endogenous immunoglobulin heavy chain is disclosed in U.S.

30   Patent No. 5,939,598. It can be obtained by a method including deleting the J segment genes from at least one endogenous heavy chain locus in an embryonic stem cell to

prevent rearrangement of the locus and to prevent formation of a transcript of a

rearranged immunoglobulin heavy chain locus, the deletion being effected by a targeting

vector containing a gene encoding a selectable marker; and producing from the

embryonic stem cell a transgenic mouse whose somatic and germ cells contain the gene

5   encoding the selectable marker.

A method for producing an antibody of interest, such as a human antibody, is

disclosed in U.S. Patent No. 5,916,771. It includes introducing an expression vector that

contains a nucleotide sequence encoding a heavy chain into one mammalian host cell in

culture, introducing an expression vector containing a nucleotide sequence encoding a

10   light chain into another mammalian host cell, and fusing the two cells to form a hybrid

cell. The hybrid cell expresses an antibody containing the heavy chain and the light

chain.

In a further improvement on this procedure, a method for identifying a clinically

relevant epitope on an immunogen, and a correlative method for selecting an antibody

15   that binds immunospecifically to the relevant epitope with high affinity, are disclosed in

PCT publication WO 99/53049.

5.13.4 F_{ab} Fragments and Single Chain Antibodies

According to the invention, techniques can be adapted for the production of

20   single-chain antibodies specific to an antigenic protein of the invention (see e.g., U.S.

Patent No. 4,946,778). In addition, methods can be adapted for the construction of F_{ab}

expression libraries (see e.g., Huse, et al., 1989 Science 246: 1275-1281) to allow rapid

and effective identification of monoclonal F_{ab} fragments with the desired specificity for a

protein or derivatives, fragments, analogs or homologs thereof. Antibody fragments that

25   contain the idiotypes to a protein antigen may be produced by techniques known in the

art including, but not limited to: (i) an $F_{(ab')2}$ fragment produced by pepsin digestion of an

antibody molecule; (ii) an F_{ab} fragment generated by reducing the disulfide bridges of an

$F_{(ab')2}$ fragment; (iii) an F_{ab} fragment generated by the treatment of the antibody molecule

with papain and a reducing agent and (iv) F_v fragments.

30

5.13.5 Bispecific Antibodies

Bispecific antibodies are monoclonal, preferably human or humanized, antibodies that have binding specificities for at least two different antigens. In the present case, one of the binding specificities is for an antigenic protein of the invention. The second binding target is any other antigen, and advantageously is a cell-surface protein or

5   receptor or receptor subunit.

Methods for making bispecific antibodies are known in the art. Traditionally, the recombinant production of bispecific antibodies is based on the co-expression of two immunoglobulin heavy-chain/light-chain pairs, where the two heavy chains have different specificities (Milstein and Cuello, Nature, 305:537-539 (1983)). Because of the

10   random assortment of immunoglobulin heavy and light chains, these hybridomas (quadromas) produce a potential mixture of ten different antibody molecules, of which only one has the correct bispecific structure. The purification of the correct molecule is usually accomplished by affinity chromatography steps. Similar procedures are disclosed in WO 93/08829, published 13 May 1993, and in Traunecker et al., 1991 EMBO J.,

15   10:3655-3659.

Antibody variable domains with the desired binding specificities (antibody-antigen combining sites) can be fused to immunoglobulin constant domain sequences. The fusion preferably is with an immunoglobulin heavy-chain constant domain, comprising at least part of the hinge, CH2, and CH3 regions. It is preferred to have the

20   first heavy-chain constant region (CH1) containing the site necessary for light-chain binding present in at least one of the fusions. DNAs encoding the immunoglobulin heavy-chain fusions and, if desired, the immunoglobulin light chain, are inserted into separate expression vectors, and are co-transfected into a suitable host organism. For further details of generating bispecific antibodies see, for example, Suresh et al., Methods

25   in Enzymology, 121:210 (1986).

According to another approach described in WO 96/27011, the interface between a pair of antibody molecules can be engineered to maximize the percentage of heterodimers which are recovered from recombinant cell culture. The preferred interface comprises at least a part of the CH3 region of an antibody constant domain. In this

30   method, one or more small amino acid side chains from the interface of the first antibody molecule are replaced with larger side chains (e.g. tyrosine or tryptophan).

Compensatory "cavities" of identical or similar size to the large side chain(s) are created on the interface of the second antibody molecule by replacing large amino acid side chains with smaller ones (e.g. alanine or threonine). This provides a mechanism for increasing the yield of the heterodimer over other unwanted end-products such as

5   homodimers.

Bispecific antibodies can be prepared as full length antibodies or antibody fragments (e.g. F(ab')$_2$ bispecific antibodies). Techniques for generating bispecific antibodies from antibody fragments have been described in the literature. For example, bispecific antibodies can be prepared using chemical linkage. Brennan et al., Science

10   229:81 (1985) describe a procedure wherein intact antibodies are proteolytically cleaved to generate F(ab')$_2$ fragments. These fragments are reduced in the presence of the dithiol complexing agent sodium arsenite to stabilize vicinal dithiols and prevent intermolecular disulfide formation. The Fab' fragments generated are then converted to thionitrobenzoate (TNB) derivatives. One of the Fab'-TNB derivatives is then

15   reconverted to the Fab'-thiol by reduction with mercaptoethylamine and is mixed with an equimolar amount of the other Fab'-TNB derivative to form the bispecific antibody. The bispecific antibodies produced can be used as agents for the selective immobilization of enzymes.

Additionally, Fab' fragments can be directly recovered from E. coli and

20   chemically coupled to form bispecific antibodies. Shalaby et al., J. Exp. Med. 175:217-225 (1992) describe the production of a fully humanized bispecific antibody F(ab')$_2$ molecule. Each Fab' fragment was separately secreted from E. coli and subjected to directed chemical coupling in vitro to form the bispecific antibody. The bispecific antibody thus formed was able to bind to cells overexpressing the ErbB2 receptor and

25   normal human T cells, as well as trigger the lytic activity of human cytotoxic lymphocytes against human breast tumor targets.

Various techniques for making and isolating bispecific antibody fragments directly from recombinant cell culture have also been described. For example, bispecific antibodies have been produced using leucine zippers. Kostelny et al., J. Immunol.

30   148(5):1547-1553 (1992). The leucine zipper peptides from the Fos and Jun proteins were linked to the Fab' portions of two different antibodies by gene fusion. The antibody

homodimers were reduced at the hinge region to form monomers and then re-oxidized to form the antibody heterodimers. This method can also be utilized for the production of antibody homodimers. The "diabody" technology described by Hollinger et al., Proc. Natl. Acad. Sci. USA 90:6444-6448 (1993) has provided an alternative mechanism for

5   making bispecific antibody fragments. The fragments comprise a heavy-chain variable domain (V_H) connected to a light-chain variable domain (V_L) by a linker which is too short to allow pairing between the two domains on the same chain. Accordingly, the V_H and V_L domains of one fragment are forced to pair with the complementary V_L and V_H domains of another fragment, thereby forming two antigen-binding sites. Another

10   strategy for making bispecific antibody fragments by the use of single-chain Fv (sFv) dimers has also been reported. See, Gruber et al., J. Immunol. 152:5368 (1994).

Antibodies with more than two valencies are contemplated. For example, trispecific antibodies can be prepared. Tutt et al., J. Immunol. 147:60 (1991). Exemplary bispecific antibodies can bind to two different epitopes, at least one of which

15   originates in the protein antigen of the invention. Alternatively, an anti-antigenic arm of an immunoglobulin molecule can be combined with an arm which binds to a triggering molecule on a leukocyte such as a T-cell receptor molecule (e.g. CD2, CD3, CD28, or B7), or Fc receptors for IgG (FcγR), such as FcγRI (CD64), FcγRII (CD32) and FcγRIII (CD16) so as to focus cellular defense mechanisms to the cell expressing the particular

20   antigen. Bispecific antibodies can also be used to direct cytotoxic agents to cells which express a particular antigen. These antibodies possess an antigen-binding arm and an arm which binds a cytotoxic agent or a radionuclide chelator, such as EOTUBE, DPTA, DOTA, or TETA. Another bispecific antibody of interest binds the protein antigen described herein and further binds tissue factor (TF).

25

5.13.6 Heteroconjugate Antibodies

Heteroconjugate antibodies are also within the scope of the present invention. Heteroconjugate antibodies are composed of two covalently joined antibodies. Such antibodies have, for example, been proposed to target immune system cells to unwanted

30   cells (U.S. Patent No. 4,676,980), and for treatment of HIV infection (WO 91/00360; WO 92/200373; EP 03089). It is contemplated that the antibodies can be prepared in

vitro using known methods in synthetic protein chemistry, including those involving

crosslinking agents. For example, immunotoxins can be constructed using a disulfide

exchange reaction or by forming a thioether bond. Examples of suitable reagents for this

purpose include iminothiolate and methyl-4-mercaptobutyrimidate and those disclosed,

5   for example, in U.S. Patent No. 4,676,980.

5.13.7 Effector Function Engineering

It can be desirable to modify the antibody of the invention with respect to effector

function, so as to enhance, e.g., the effectiveness of the antibody in treating cancer. For

10   example, cysteine residue(s) can be introduced into the Fc region, thereby allowing

interchain disulfide bond formation in this region. The homodimeric antibody thus

generated can have improved internalization capability and/or increased complement-

mediated cell killing and antibody-dependent cellular cytotoxicity (ADCC). See Caron et

al., J. Exp Med., 176: 1191-1195 (1992) and Shopes, J. Immunol., 148: 2918-2922

15   (1992). Homodimeric antibodies with enhanced anti-tumor activity can also be prepared

using heterobifunctional cross-linkers as described in Wolff et al. Cancer Research, 53:

2560-2565 (1993). Alternatively, an antibody can be engineered that has dual Fc regions

and can thereby have enhanced complement lysis and ADCC capabilities. See Stevenson

et al., Anti-Cancer Drug Design, 3: 219-230 (1989).

20

5.13.8 Immunoconjugates

The invention also pertains to immunoconjugates comprising an antibody

conjugated to a cytotoxic agent such as a chemotherapeutic agent, toxin (e.g., an

enzymatically active toxin of bacterial, fungal, plant, or animal origin, or fragments

25   thereof), or a radioactive isotope (i.e., a radioconjugate).

Chemotherapeutic agents useful in the generation of such immunoconjugates have

been described above. Enzymatically active toxins and fragments thereof that can be

used include diphtheria A chain, nonbinding active fragments of diphtheria toxin,

exotoxin A chain (from Pseudomonas aeruginosa), ricin A chain, abrin A chain,

30   modeccin A chain, alpha-sarcin, Aleurites fordii proteins, dianthin proteins, Phytolaca

americana proteins (PAPI, PAPII, and PAP-S), momordica charantia inhibitor, curcin,

crotin, sapaonaria officinalis inhibitor, gelonin, mitogellin, restrictocin, phenomycin, enomycin, and the tricothecenes. A variety of radionuclides are available for the production of radioconjugated antibodies. Examples include ^{212}Bi, ^{131}I, ^{131}In, ^{90}Y, and ^{186}Re.

5   Conjugates of the antibody and cytotoxic agent are made using a variety of bifunctional protein-coupling agents such as N-succinimidyl-3-(2-pyridyldithiol) propionate (SPDP), iminothiolane (IT), bifunctional derivatives of imidoesters (such as dimethyl adipimidate HCL), active esters (such as disuccinimidyl suberate), aldehydes (such as glutareldehyde), bis-azido compounds (such as bis (p-azidobenzoyl)

10   hexanediamine), bis-diazonium derivatives (such as bis-(p-diazoniumbenzoyl)-ethylenediamine), diisocyanates (such as tolyene 2,6-diisocyanate), and bis-active fluorine compounds (such as 1,5-difluoro-2,4-dinitrobenzene). For example, a ricin immunotoxin can be prepared as described in Vitetta et al., Science, 238: 1098 (1987). Carbon-14-labeled 1-isothiocyanatobenzyl-3-methyldiethylene triaminepentaacetic acid

15   (MX-DTPA) is an exemplary chelating agent for conjugation of radionucleotide to the antibody. See WO94/11026.

In another embodiment, the antibody can be conjugated to a "receptor" (such streptavidin) for utilization in tumor pretargeting wherein the antibody-receptor conjugate is administered to the patient, followed by removal of unbound conjugate from the

20   circulation using a clearing agent and then administration of a "ligand" (e.g., avidin) that is in turn conjugated to a cytotoxic agent.

4.14 COMPUTER READABLE SEQUENCES

In one application of this embodiment, a nucleotide sequence of the present

25   invention can be recorded on computer readable media. As used herein, "computer readable media" refers to any medium which can be read and accessed directly by a computer. Such media include, but are not limited to: magnetic storage media, such as floppy discs, hard disc storage medium, and magnetic tape; optical storage media such as CD-ROM; electrical storage media such as RAM and ROM; and hybrids of these

30   categories such as magnetic/optical storage media. A skilled artisan can readily appreciate how any of the presently known computer readable mediums can be used to

create a manufacture comprising computer readable medium having recorded thereon a

nucleotide sequence of the present invention. As used herein, "recorded" refers to a

process for storing information on computer readable medium. A skilled artisan can

readily adopt any of the presently known methods for recording information on computer

5   readable medium to generate manufactures comprising the nucleotide sequence

information of the present invention.

A variety of data storage structures are available to a skilled artisan for creating a

computer readable medium having recorded thereon a nucleotide sequence of the present

invention. The choice of the data storage structure will generally be based on the means

10   chosen to access the stored information. In addition, a variety of data processor programs

and formats can be used to store the nucleotide sequence information of the present

invention on computer readable medium. The sequence information can be represented

in a word processing text file, formatted in commercially-available software such as

WordPerfect and Microsoft Word, or represented in the form of an ASCII file, stored in a

15   database application, such as DB2, Sybase, Oracle, or the like. A skilled artisan can

readily adapt any number of data processor structuring formats (e.g. text file or database)

in order to obtain computer readable medium having recorded thereon the nucleotide

sequence information of the present invention.

By providing any of the nucleotide sequences SEQ ID NO:1-739 or a

20   representative fragment thereof; or a nucleotide sequence at least 95% identical to any of

the nucleotide sequences of SEQ ID NO:1-739 in computer readable form, a skilled

artisan can routinely access the sequence information for a variety of purposes.

Computer software is publicly available which allows a skilled artisan to access sequence

information provided in a computer readable medium. The examples which follow

25   demonstrate how software which implements the BLAST (Altschul et al., J. Mol. Biol.

215:403-410 (1990)) and BLAZE (Brutlag et al., Comp. Chem. 17:203-207 (1993))

search algorithms on a Sybase system is used to identify open reading frames (ORFs)

within a nucleic acid sequence. Such ORFs may be protein encoding fragments and may

be useful in producing commercially important proteins such as enzymes used in

30   fermentation reactions and in the production of commercially useful metabolites.

As used herein, "a computer-based system" refers to the hardware means, software means, and data storage means used to analyze the nucleotide sequence information of the present invention. The minimum hardware means of the computer-based systems of the present invention comprises a central processing unit

5   (CPU), input means, output means, and data storage means. A skilled artisan can readily appreciate that any one of the currently available computer-based systems are suitable for use in the present invention. As stated above, the computer-based systems of the present invention comprise a data storage means having stored therein a nucleotide sequence of the present invention and the necessary hardware means and software means for

10   supporting and implementing a search means. As used herein, "data storage means" refers to memory which can store nucleotide sequence information of the present invention, or a memory access means which can access manufactures having recorded thereon the nucleotide sequence information of the present invention.

As used herein, "search means" refers to one or more programs which are

15   implemented on the computer-based system to compare a target sequence or target structural motif with the sequence information stored within the data storage means. Search means are used to identify fragments or regions of a known sequence which match a particular target sequence or target motif. A variety of known algorithms are disclosed publicly and a variety of commercially available software for conducting search

20   means are and can be used in the computer-based systems of the present invention. Examples of such software includes, but is not limited to, Smith-Waterman, MacPattern (EMBL), BLASTN and BLASTA (NPOLYPEPTIDEIA). A skilled artisan can readily recognize that any one of the available algorithms or implementing software packages for conducting homology searches can be adapted for use in the present computer-based

25   systems. As used herein, a "target sequence" can be any nucleic acid or amino acid sequence of six or more nucleotides or two or more amino acids. A skilled artisan can readily recognize that the longer a target sequence is, the less likely a target sequence will be present as a random occurrence in the database. The most preferred sequence length of a target sequence is from about 10 to 300 amino acids, more preferably from about 30

30   to 100 nucleotide residues. However, it is well recognized that searches for

commercially important fragments, such as sequence fragments involved in gene

expression and protein processing, may be of shorter length.

As used herein, "a target structural motif," or "target motif," refers to any

rationally selected sequence or combination of sequences in which the sequence(s) are

5   chosen based on a three-dimensional configuration which is formed upon the folding of

the target motif. There are a variety of target motifs known in the art. Protein target

motifs include, but are not limited to, enzyme active sites and signal sequences. Nucleic

acid target motifs include, but are not limited to, promoter sequences, hairpin structures

and inducible expression elements (protein binding sequences).

10

4.15 TRIPLE HELIX FORMATION

In addition, the fragments of the present invention, as broadly described, can be

used to control gene expression through triple helix formation or antisense DNA or RNA,

both of which methods are based on the binding of a polynucleotide sequence to DNA or

15   RNA. Polynucleotides suitable for use in these methods are preferably 20 to 40 bases in

length and are designed to be complementary to a region of the gene involved in

transcription (triple helix - see Lee et al., Nucl. Acids Res. 6:3073 (1979); Cooney et al.,

Science 15241:456 (1988); and Dervan et al., Science 251:1360 (1991)) or to the mRNA

itself (antisense - Olmno, J. Neurochem. 56:560 (1991); Oligodeoxynucleotides as

20   Antisense Inhibitors of Gene Expression, CRC Press, Boca Raton, FL (1988)). Triple

helix-formation optimally results in a shut-off of RNA transcription from DNA, while

antisense RNA hybridization blocks translation of an mRNA molecule into polypeptide.

Both techniques have been demonstrated to be effective in model systems. Information

contained in the sequences of the present invention is necessary for the design of an

25   antisense or triple helix oligonucleotide.

4.16 DIAGNOSTIC ASSAYS AND KITS

The present invention further provides methods to identify the presence or

expression of one of the ORFs of the present invention, or homolog thereof, in a test

30   sample, using a nucleic acid probe or antibodies of the present invention, optionally

conjugated or otherwise associated with a suitable label.

In general, methods for detecting a polynucleotide of the invention can comprise contacting a sample with a compound that binds to and forms a complex with the polynucleotide for a period sufficient to form the complex, and detecting the complex, so that if a complex is detected, a polynucleotide of the invention is detected in the sample.

5   Such methods can also comprise contacting a sample under stringent hybridization conditions with nucleic acid primers that anneal to a polynucleotide of the invention under such conditions, and amplifying annealed polynucleotides, so that if a polynucleotide is amplified, a polynucleotide of the invention is detected in the sample.

In general, methods for detecting a polypeptide of the invention can comprise

10   contacting a sample with a compound that binds to and forms a complex with the polypeptide for a period sufficient to form the complex, and detecting the complex, so that if a complex is detected, a polypeptide of the invention is detected in the sample.

In detail, such methods comprise incubating a test sample with one or more of the antibodies or one or more of the nucleic acid probes of the present invention and assaying

15   for binding of the nucleic acid probes or antibodies to components within the test sample.

Conditions for incubating a nucleic acid probe or antibody with a test sample vary. Incubation conditions depend on the format employed in the assay, the detection methods employed, and the type and nature of the nucleic acid probe or antibody used in the assay. One skilled in the art will recognize that any one of the commonly available

20   hybridization, amplification or immunological assay formats can readily be adapted to employ the nucleic acid probes or antibodies of the present invention. Examples of such assays can be found in Chard, T., An Introduction to Radioimmunoassay and Related Techniques, Elsevier Science Publishers, Amsterdam, The Netherlands (1986); Bullock, G.R. et al., Techniques in Immunocytochemistry, Academic Press, Orlando, FL Vol. 1

25   (1982), Vol. 2 (1983), Vol. 3 (1985); Tijssen, P., Practice and Theory of immunoassays: Laboratory Techniques in Biochemistry and Molecular Biology, Elsevier Science Publishers, Amsterdam, The Netherlands (1985). The test samples of the present invention include cells, protein or membrane extracts of cells, or biological fluids such as sputum, blood, serum, plasma, or urine. The test sample used in the above-described

30   method will vary based on the assay format, nature of the detection method and the tissues, cells or extracts used as the sample to be assayed. Methods for preparing protein

extracts or membrane extracts of cells are well known in the art and can be readily be adapted in order to obtain a sample which is compatible with the system utilized.

In another embodiment of the present invention, kits are provided which contain the necessary reagents to carry out the assays of the present invention. Specifically, the

5   invention provides a compartment kit to receive, in close confinement, one or more containers which comprises: (a) a first container comprising one of the probes or antibodies of the present invention; and (b) one or more other containers comprising one or more of the following: wash reagents, reagents capable of detecting presence of a bound probe or antibody.

10 In detail, a compartment kit includes any kit in which reagents are contained in separate containers. Such containers include small glass containers, plastic containers or strips of plastic or paper. Such containers allows one to efficiently transfer reagents from one compartment to another compartment such that the samples and reagents are not cross-contaminated, and the agents or solutions of each container can be added in a

15 quantitative fashion from one compartment to another. Such containers will include a container which will accept the test sample, a container which contains the antibodies used in the assay, containers which contain wash reagents (such as phosphate buffered saline, Tris-buffers, etc.), and containers which contain the reagents used to detect the bound antibody or probe. Types of detection reagents include labeled nucleic acid probes,

20 labeled secondary antibodies, or in the alternative, if the primary antibody is labeled, the enzymatic, or antibody binding reagents which are capable of reacting with the labeled antibody. One skilled in the art will readily recognize that the disclosed probes and antibodies of the present invention can be readily incorporated into one of the established kit formats which are well known in the art.

25

4.17 MEDICAL IMAGING

The novel polypeptides and binding partners of the invention are useful in medical imaging of sites expressing the molecules of the invention (e.g., where the polypeptide of the invention is involved in the immune response, for imaging sites of

30 inflammation or infection). See, e.g., Kunkel et al., U.S. Pat. NO. 5,413,778. Such methods involve chemical attachment of a labeling or imaging agent, administration of

the labeled polypeptide to a subject in a pharmaceutically acceptable carrier, and imaging the labeled polypeptide *in vivo* at the target site.

4.18 SCREENING ASSAYS

5   Using the isolated proteins and polynucleotides of the invention, the present invention further provides methods of obtaining and identifying agents which bind to a polypeptide encoded by an ORF corresponding to any of the nucleotide sequences set forth in SEQ ID NO:1-739, or bind to a specific domain of the polypeptide encoded by the nucleic acid. In detail, said method comprises the steps of:

10   (a)   contacting an agent with an isolated protein encoded by an ORF of the present invention, or nucleic acid of the invention; and

          (b)   determining whether the agent binds to said protein or said nucleic acid.

          In general, therefore, such methods for identifying compounds that bind to a polynucleotide of the invention can comprise contacting a compound with a

15   polynucleotide of the invention for a time sufficient to form a polynucleotide/compound complex, and detecting the complex, so that if a polynucleotide/compound complex is detected, a compound that binds to a polynucleotide of the invention is identified.

          Likewise, in general, therefore, such methods for identifying compounds that bind to a polypeptide of the invention can comprise contacting a compound with a polypeptide

20   of the invention for a time sufficient to form a polypeptide/compound complex, and detecting the complex, so that if a polypeptide/compound complex is detected, a compound that binds to a polynucleotide of the invention is identified.

          Methods for identifying compounds that bind to a polypeptide of the invention can also comprise contacting a compound with a polypeptide of the invention in a cell for

25   a time sufficient to form a polypeptide/compound complex, wherein the complex drives expression of a receptor gene sequence in the cell, and detecting the complex by detecting reporter gene sequence expression, so that if a polypeptide/compound complex is detected, a compound that binds a polypeptide of the invention is identified.

          Compounds identified via such methods can include compounds which modulate

30   the activity of a polypeptide of the invention (that is, increase or decrease its activity, relative to activity observed in the absence of the compound). Alternatively, compounds

identified via such methods can include compounds which modulate the expression of a polynucleotide of the invention (that is, increase or decrease expression relative to expression levels observed in the absence of the compound). Compounds, such as compounds identified via the methods of the invention, can be tested using standard

5 assays well known to those of skill in the art for their ability to modulate activity/expression.

The agents screened in the above assay can be, but are not limited to, peptides, carbohydrates, vitamin derivatives, or other pharmaceutical agents. The agents can be selected and screened at random or rationally selected or designed using protein modeling

10 techniques.

For random screening, agents such as peptides, carbohydrates, pharmaceutical agents and the like are selected at random and are assayed for their ability to bind to the protein encoded by the ORF of the present invention. Alternatively, agents may be rationally selected or designed. As used herein, an agent is said to be "rationally selected

15 or designed" when the agent is chosen based on the configuration of the particular protein. For example, one skilled in the art can readily adapt currently available procedures to generate peptides, pharmaceutical agents and the like, capable of binding to a specific peptide sequence, in order to generate rationally designed antipeptide peptides, for example see Hurby et al., Application of Synthetic Peptides: Antisense Peptides," In

20 Synthetic Peptides, A User's Guide, W.H. Freeman, NY (1992), pp. 289-307, and Kaspczak et al., Biochemistry 28:9230-8 (1989), or pharmaceutical agents, or the like.

In addition to the foregoing, one class of agents of the present invention, as broadly described, can be used to control gene expression through binding to one of the ORFs or EMFs of the present invention. As described above, such agents can be

25 randomly screened or rationally designed/selected. Targeting the ORF or EMF allows a skilled artisan to design sequence specific or element specific agents, modulating the expression of either a single ORF or multiple ORFs which rely on the same EMF for expression control. One class of DNA binding agents are agents which contain base residues which hybridize or form a triple helix formation by binding to DNA or RNA.

30 Such agents can be based on the classic phosphodiester, ribonucleic acid backbone, or

can be a variety of sulfhydryl or polymeric derivatives which have base attachment capacity.

Agents suitable for use in these methods preferably contain 20 to 40 bases and are designed to be complementary to a region of the gene involved in transcription (triple helix - see Lee et al., Nucl. Acids Res. 6:3073 (1979); Cooney et al., Science 241:456 (1988); and Dervan et al., Science 251:1360 (1991)) or to the mRNA itself (antisense - Okano, J. Neurochem. 56:560 (1991); Oligodeoxynucleotides as Antisense Inhibitors of Gene Expression, CRC Press, Boca Raton, FL (1988)). Triple helix-formation optimally results in a shut-off of RNA transcription from DNA, while antisense RNA hybridization blocks translation of an mRNA molecule into polypeptide. Both techniques have been demonstrated to be effective in model systems. Information contained in the sequences of the present invention is necessary for the design of an antisense or triple helix oligonucleotide and other DNA binding agents.

Agents which bind to a protein encoded by one of the ORFs of the present invention can be used as a diagnostic agent. Agents which bind to a protein encoded by one of the ORFs of the present invention can be formulated using known techniques to generate a pharmaceutical composition.

4.19 USE OF NUCLEIC ACIDS AS PROBES

Another aspect of the subject invention is to provide for polypeptide-specific nucleic acid hybridization probes capable of hybridizing with naturally occurring nucleotide sequences. The hybridization probes of the subject invention may be derived from any of the nucleotide sequences SEQ ID NO:1-739. Because the corresponding gene is only expressed in a limited number of tissues, a hybridization probe derived from of any of the nucleotide sequences SEQ ID NO:1-739 can be used as an indicator of the presence of RNA of cell type of such a tissue in a sample.

Any suitable hybridization technique can be employed, such as, for example, in situ hybridization. PCR as described in US Patents Nos. 4,683,195 and 4,965,188 provides additional uses for oligonucleotides based upon the nucleotide sequences. Such probes used in PCR may be of recombinant origin, may be chemically synthesized, or a mixture of both. The probe will comprise a discrete nucleotide sequence for the detection

of identical sequences or a degenerate pool of possible sequences for identification of closely related genomic sequences.

Other means for producing specific hybridization probes for nucleic acids include the cloning of nucleic acid sequences into vectors for the production of mRNA probes.

5   Such vectors are known in the art and are commercially available and may be used to synthesize RNA probes *in vitro* by means of the addition of the appropriate RNA polymerase as T7 or SP6 RNA polymerase and the appropriate radioactively labeled nucleotides. The nucleotide sequences may be used to construct hybridization probes for mapping their respective genomic sequences. The nucleotide sequence provided herein

10   may be mapped to a chromosome or specific regions of a chromosome using well known genetic and/or chromosomal mapping techniques. These techniques include in situ hybridization, linkage analysis against known chromosomal markers, hybridization screening with libraries or flow-sorted chromosomal preparations specific to known chromosomes, and the like. The technique of fluorescent in situ hybridization of

15   chromosome spreads has been described, among other places, in Verma et al (1988) Human Chromosomes: A Manual of Basic Techniques, Pergamon Press, New York NY.

Fluorescent *in situ* hybridization of chromosomal preparations and other physical chromosome mapping techniques may be correlated with additional genetic map data. Examples of genetic map data can be found in the 1994 Genome Issue of Science

20   (265:1981f). Correlation between the location of a nucleic acid on a physical chromosomal map and a specific disease (or predisposition to a specific disease) may help delimit the region of DNA associated with that genetic disease. The nucleotide sequences of the subject invention may be used to detect differences in gene sequences between normal, carrier or affected individuals.

25   **4.20   PREPARATION OF SUPPORT BOUND OLIGONUCLEOTIDES**

Oligonucleotides, i.e., small nucleic acid segments, may be readily prepared by, for example, directly synthesizing the oligonucleotide by chemical means, as is commonly practiced using an automated oligonucleotide synthesizer.

Support bound oligonucleotides may be prepared by any of the methods known to

30   those of skill in the art using any suitable support such as glass, polystyrene or Teflon. One strategy is to precisely spot oligonucleotides synthesized by standard synthesizers.

Immobilization can be achieved using passive adsorption (Inouye & Hondo, (1990) J. Clin.

Microbiol. 28(6) 1469-72); using UV light (Nagata *et al.*, 1985; Dahlen *et al.*, 1987;

Morrissey & Collins, (1989) Mol. Cell Probes 3(2) 189-207) or by covalent binding of base

modified DNA (Keller *et al.*, 1988; 1989); all references being specifically incorporated

5   herein.

Another strategy that may be employed is the use of the strong biotin-streptavidin

interaction as a linker. For example, Broude *et al.* (1994) Proc. Natl. Acad. Sci. USA 91(8)

3072-6, describe the use of biotinylated probes, although these are duplex probes, that are

immobilized on streptavidin-coated magnetic beads. Streptavidin-coated beads may be

10   purchased from Dynal, Oslo. Of course, this same linking chemistry is applicable to coating

any surface with streptavidin. Biotinylated probes may be purchased from various sources,

such as, e.g., Operon Technologies (Alameda, CA).

Nunc Laboratories (Naperville, IL) is also selling suitable material that could be

used. Nunc Laboratories have developed a method by which DNA can be covalently bound

15   to the microwell surface termed Covalink NH. CovaLink NH is a polystyrene surface

grafted with secondary amino groups (>NH) that serve as bridge-heads for further covalent

coupling. CovaLink Modules may be purchased from Nunc Laboratories. DNA molecules

may be bound to CovaLink exclusively at the 5'-end by a phosphoramidate bond, allowing

immobilization of more than 1 pmol of DNA (Rasmussen *et al.*, (1991) Anal. Biochem.

20   198(1) 138-42).

The use of CovaLink NH strips for covalent binding of DNA molecules at the 5'-end

has been described (Rasmussen et al., (1991). In this technology, a phosphoramidate bond

is employed (Chu et al., (1983) Nucleic Acids Res. 11(8) 6513-29). This is beneficial as

immobilization using only a single covalent bond is preferred. The phosphoramidate bond

25   joins the DNA to the CovaLink NH secondary amino groups that are positioned at the end

of spacer arms covalently grafted onto the polystyrene surface through a 2 nm long spacer

arm. To link an oligonucleotide to CovaLink NH via an phosphoramidate bond, the

oligonucleotide terminus must have a 5'-end phosphate group. It is, perhaps, even possible

for biotin to be covalently bound to CovaLink and then streptavidin used to bind the probes.

30   More specifically, the linkage method includes dissolving DNA in water (7.5 ng/ul)

and denaturing for 10 min. at 95°C and cooling on ice for 10 min. Ice-cold 0.1 M

1-methylimidazole, pH 7.0 (1-MeIm7), is then added to a final concentration of 10 mM 1-MeIm7. A ss DNA solution is then dispensed into CovaLink NH strips (75 ul/well) standing on ice.

Carbodiimide 0.2 M 1-ethyl-3-(3-dimethylaminopropyl)-carbodiimide (EDC),

5   dissolved in 10 mM 1-MeIm7, is made fresh and 25 ul added per well. The strips are incubated for 5 hours at 50°C. After incubation the strips are washed using, e.g., Nunc-Immuno Wash; first the wells are washed 3 times, then they are soaked with washing solution for 5 min., and finally they are washed 3 times (where in the washing solution is 0.4 N NaOH, 0.25% SDS heated to 50°C).

10 .   It is contemplated that a further suitable method for use with the present invention is that described in PCT Patent Application WO 90/03382 (Southern & Maskos), incorporated herein by reference. This method of preparing an oligonucleotide bound to a support involves attaching a nucleoside 3'-reagent through the phosphate group by a covalent phosphodiester link to aliphatic hydroxyl groups carried by the support. The

15   oligonucleotide is then synthesized on the supported nucleoside and protecting groups removed from the synthetic oligonucleotide chain under standard conditions that do not cleave the oligonucleotide from the support. Suitable reagents include nucleoside phosphoramidite and nucleoside hydrogen phosphorate.

An on-chip strategy for the preparation of DNA probe for the preparation of DNA

20   probe arrays may be employed. For example, addressable laser-activated photodeprotection may be employed in the chemical synthesis of oligonucleotides directly on a glass surface, as described by Fodor et al. (1991) Science 251(4995) 767-73, incorporated herein by reference. Probes may also be immobilized on nylon supports as described by Van Ness et al. (1991) Nucleic Acids Res. 19(12) 3345-50; or linked to Teflon using the method of

25   Duncan & Cavalier (1988) Anal. Biochem. 169(1) 104-8; all references being specifically incorporated herein.

To link an oligonucleotide to a nylon support, as described by Van Ness et al. (1991), requires activation of the nylon surface via alkylation and selective activation of the 5'-amine of oligonucleotides with cyanuric chloride.

30   One particular way to prepare support bound oligonucleotides is to utilize the light-generated synthesis described by Pease et al., (1994) PNAS USA 91(11) 5022-6,

incorporated herein by reference). These authors used current photolithographic techniques to generate arrays of immobilized oligonucleotide probes (DNA chips). These methods, in which light is used to direct the synthesis of oligonucleotide probes in high-density, miniaturized arrays, utilize photolabile 5'-protected N-acyl-deoxynucleoside

5   phosphoramidites, surface linker chemistry and versatile combinatorial synthesis strategies. A matrix of 256 spatially defined oligonucleotide probes may be generated in this manner.

4.21   PREPARATION OF NUCLEIC ACID FRAGMENTS

The nucleic acids may be obtained from any appropriate source, such as cDNAs, genomic DNA, chromosomal DNA, microdissected chromosome bands, cosmid or YAC

10   inserts, and RNA, including mRNA without any amplification steps. For example, Sambrook et al. (1989) describes three protocols for the isolation of high molecular weight DNA from mammalian cells (p. 9.14-9.23).

DNA fragments may be prepared as clones in M13, plasmid or lambda vectors and/or prepared directly from genomic DNA or cDNA by PCR or other amplification

15   methods. Samples may be prepared or dispensed in multiwell plates. About 100-1000 ng of DNA samples may be prepared in 2-500 ml of final volume.

The nucleic acids would then be fragmented by any of the methods known to those of skill in the art including, for example, using restriction enzymes as described at 9.24-9.28 of Sambrook et al. (1989), shearing by ultrasound and NaOH treatment.

20   Low pressure shearing is also appropriate, as described by Schriefer et al. (1990) Nucleic Acids Res. 18(24) 7455-6, incorporated herein by reference). In this method, DNA samples are passed through a small French pressure cell at a variety of low to intermediate pressures. A lever device allows controlled application of low to intermediate pressures to the cell. The results of these studies indicate that low-pressure shearing is a useful

25   alternative to sonic and enzymatic DNA fragmentation methods.

One particularly suitable way for fragmenting DNA is contemplated to be that using the two base recognition endonuclease, CviJI, described by Fitzgerald et al. (1992) Nucleic Acids Res. 20(14) 3753-62. These authors described an approach for the rapid fragmentation and fractionation of DNA into particular sizes that they contemplated to be

30   suitable for shotgun cloning and sequencing.

The restriction endonuclease CviJI normally cleaves the recognition sequence PuGCPy between the G and C to leave blunt ends. Atypical reaction conditions, which alter the specificity of this enzyme (CviJI**), yield a quasi-random distribution of DNA fragments form the small molecule pUC19 (2688 base pairs). Fitzgerald et al. (1992)

5   quantitatively evaluated the randomness of this fragmentation strategy, using a CviJI** digest of pUC19 that was size fractionated by a rapid gel filtration method and directly ligated, without end repair, to a lac Z minus M13 cloning vector. Sequence analysis of 76 clones showed that CviJI** restricts pyGCPy and PuGCPu, in addition to PuGCPy sites, and that new sequence data is accumulated at a rate consistent with random fragmentation.

10 As reported in the literature, advantages of this approach compared to sonication and agarose gel fractionation include: smaller amounts of DNA are required (0.2-0.5 ug instead of 2-5 ug); and fewer steps are involved (no preligation, end repair, chemical extraction, or agarose gel electrophoresis and elution are needed

Irrespective of the manner in which the nucleic acid fragments are obtained or

15 prepared, it is important to denature the DNA to give single stranded pieces available for hybridization. This is achieved by incubating the DNA solution for 2-5 minutes at 80-90°C. The solution is then cooled quickly to 2°C to prevent renaturation of the DNA fragments before they are contacted with the chip. Phosphate groups must also be removed from genomic DNA by methods known in the art.

20 ### 4.22   PREPARATION OF DNA ARRAYS

Arrays may be prepared by spotting DNA samples on a support such as a nylon membrane. Spotting may be performed by using arrays of metal pins (the positions of which correspond to an array of wells in a microtiter plate) to repeated by transfer of about 20 nl of a DNA solution to a nylon membrane. By offset printing, a density of dots higher than the

25 density of the wells is achieved. One to 25 dots may be accommodated in 1 mm^2, depending on the type of label used. By avoiding spotting in some preselected number of rows and columns, separate subsets (subarrays) may be formed. Samples in one subarray may be the same genomic segment of DNA (or the same gene) from different individuals, or may be different, overlapped genomic clones. Each of the subarrays may represent replica

30 spotting of the same samples. In one example, a selected gene segment may be amplified from 64 patients. For each patient, the amplified gene segment may be in one 96-well plate

(all 96 wells containing the same sample). A plate for each of the 64 patients is prepared. By using a 96-pin device, all samples may be spotted on one 8 x 12 cm membrane. Subarrays may contain 64 samples, one from each patient. Where the 96 subarrays are identical, the dot span may be 1 mm² and there may be a 1 mm space between subarrays.

5   Another approach is to use membranes or plates (available from NUNC, Naperville, Illinois) which may be partitioned by physical spacers e.g. a plastic grid molded over the membrane, the grid being similar to the sort of membrane applied to the bottom of multiwell plates, or hydrophobic strips. A fixed physical spacer is not preferred for imaging by exposure to flat phosphor-storage screens or x-ray films.

10   The present invention is illustrated in the following examples. Upon consideration of the present disclosure, one of skill in the art will appreciate that many other embodiments and variations may be made in the scope of the present invention. Accordingly, it is intended that the broader aspects of the present invention not be limited to the disclosure of the following examples. The present invention is not to be limited in scope by the

15   exemplified embodiments which are intended as illustrations of single aspects of the invention, and compositions and methods which are functionally equivalent are within the scope of the invention. Indeed, numerous modifications and variations in the practice of the invention are expected to occur to those skilled in the art upon consideration of the present preferred embodiments. Consequently, the only limitations which should be placed upon

20   the scope of the invention are those which appear in the appended claims.

All references cited within the body of the instant specification are hereby incorporated by reference in their entirety.

5.0   EXAMPLES

5.1   EXAMPLE 1

25   <u>Novel Nucleic Acid Sequences Obtained From Various Libraries</u>
A plurality of novel nucleic acids were obtained from cDNA libraries prepared from various human tissues and in some cases isolated from a genomic library derived from human chromosome using standard PCR, SBH sequence signature analysis and Sanger sequencing techniques. The inserts of the library were amplified with PCR using primers

30   specific for the vector sequences which flank the inserts. Clones from cDNA libraries were

spotted on nylon membrane filters and screened with oligonucleotide probes (e.g., 7-mers)
to obtain signature sequences. The clones were clustered into groups of similar or identical
sequences. Representative clones were selected for sequencing.

      In some cases, the 5' sequence of the amplified inserts was then deduced using a

5   typical Sanger sequencing protocol. PCR products were purified and subjected to
fluorescent dye terminator cycle sequencing. Single pass gel sequencing was done using a
377 Applied Biosystems (ABI) sequencer to obtain the novel nucleic acid sequences. In
some cases RACE (Random Amplification of cDNA Ends) was performed to further extend
the sequence in the 5' direction.

10

5.2   EXAMPLE 2

Novel Contigs

      The novel contigs of the invention were assembled from sequences that were
obtained from a cDNA library by methods described in Example 1 above, and in some cases

15   sequences obtained from one or more public databases. Chromatograms were base called
and assembled using a software suite from University of Washington, Seattle containing
three applications designated PHRED, PHRAP, and CONSED. The sequences for the
resulting nucleic acid contigs are designated as SEQ ID NO: 1-739 and are provided in the
attached Sequence Listing. The contigs were assembled using an EST sequence as a seed.

20   Then a recursive algorithm was used to extend the seed EST into an extended assemblage,
by pulling additional sequences from different databases (i.e., Hyseq's database containing
EST sequences, dbEST version 120, gb pri 120, UniGene version 120, and Genpept 120)
that belong to this assemblage. The algorithm terminated when there was no additional
sequences from the above databases that would extend the assemblage. Inclusion of

25   component sequences into the assemblage was based on a BLASTN hit to the extending
assemblage with BLAST score greater than 300 and percent identity greater than 95%.

      The nearest neighbor result for the assembled contig was obtained by a FASTA
version 3 search against Genpept release 120, using FASTXY algorithm. FASTXY is an
improved version of FASTA alignment which allows in-codon frame shifts. The nearest

30   neighbor result showed the closest homologue for each assemblage from Genpept (and

contains the translated amino acid sequences for which the assemblage encodes). The

nearest neighbor results for SEQ ID NO: 1-739 are shown in Table 2.

Tables 1, 2, and 3 follow. Table 1 shows the various tissue sources of SEQ ID NO:

1-739. Table 2 shows the nearest neighbor result for the assembled contig. The nearest

5   neighbor result shows the closest homologue for each assemblage and contains the

translated amino acid sequences for which the assemblage encodes. Table 2 also shows

homologues with identifiable functions for SEQ ID NO: 1-739. The polypeptides were

predicted using a software program called FASTY (available from

http://fasta.bioch.virginia.edu) which selects a polypeptide based on a comparison of

10   translated novel polynucleotides to known polynucleotides (W.R. Pearson, Methods in

Enzymology, Vol. 183: pp. 63-98, (1990), herein incorporated by reference). Table 3 shows

the predicted amino acid sequence corresponding to the novel nucleic acid contig sequences.

Table 1 - Tissue Sources

Tissue Origin	RNA Source	Hyseq Library Name	SEQ ID NOS:
adult brain	GIBCO	AB3001	28 46 54 62 95 117 134 175 188-189 324 330 337 356 369 371 378 386 389 396 432 435-436 468 472-473 476-477 483 486 518 538-539 543 545 557 565 571 573 578 582 598 613-614 619 627 632 634 639 687 709
adult brain	GIBCO	ABD003	5 12 46 52 57 66 79 91 97 134 144 148 150 162 164 172 175-176 181 186 193 250 323 325-327 330 334 338 362 367 369 371 378-379 386 388-389 392 396-397 399-401 403 416 422 435 444 449 451 454 461 463-464 468 472-473 483 486 494 506 511 513 516 520 523-524 526 529 533 536-537 539 545 548 552 556 558-559 562-563 565 567 569 573-574 576 579-580 582-584 590 593-594 598 602 606 613-614 619- 621 623-624 627 634 637 641 646 648 659 675 688-689 694 696-698 703 714 729
adult brain	Clontech	ABR001	57 162 164 227 266 316 334 356 367 385 438 468 512 524 528 557 582 590 621 627 631 634 689 714
adult brain	Clontech	ABR006	189 228 385 438 571 584 632 650 677
adult brain	Clontech	ABR008	1 3 5 11-25 31-32 46-47 55-57 59

Tissue Origin	RNA Source	Hyseq Library Name	SEQ ID NOS:
			61 65-67 69 75 79 91 103 108 111 113-114 126 132 150 160 162 164 171-172 186 188-189 193 202-203 206 210-212 220 222-224 227-229 233 235-236 243-247 251-252 257 264-266 268 275 313 324 328-331 334-335 338-339 343 346-347 351 355 357 359-361 365 367 370-371 378 380 382 386-389 391 396 399-400 402 406 413 419-420 423 426 432 434 437-438 442 446 448-449 459-460 465 468 470 472-473 475 481-483 487 489-490 495-497 499 501 503-504 507-509 511 520 524 526 528 532-533 536 539-540 543-546 551-552 556-557 563 565-567 569 572-573 576-577 579-580 582 584 586 590-591 593 595-597 599-602 604 610-616 620-621 624-625 627-628 632 634 637-638 641 643-644 646-647 650 653-657 660-662 668 672 675 677-678 680-681 688-689 691 693 695-696 698 706-707 709 711 713-727 729 731 733-734 736 738-739
adult brain	Clontech	ABR011	334 476 634 677
adult brain	BioChain	ABR012	379 587
adult brain	Invitrogen	ABR013	334 634
adult brain	Invitrogen	ABT004	3 19 57 62 66 75 110 122 150 160 162 167 171 176 186 197 203 211 230 232 259 328-331 334 369 382 389 394 400 406 417 426 429 442 457 472 483-484 492 511 514 529 531 534 537 540 553 558 562 572 580 582-584 590 604 611 613 615 622 637 639 643-644 648 688-689 692 695
cultured preadipo-cytes	Strategene	ADP001	16 37-39 66 109 120 141 144 193 273 316 331 333 338 389 415 429 442 444 464-465 475 489 501 511 513 531 534 539-540 545-546 557 583-584 590 596 602 607 613 615 619 622 629 632 634 643
adrenal gland	Clontech	ADR002	4-5 12 48 53 57 162 164 172 186 188 192 196 203 207 213 258 316 330-331 333 339 354 356-357 369 383 385 388 392 395 402 406 411 415 434 454-455 465 468 473 475 477 491 498 501 509 511 517 528-529 532 537-539 542 545 558 560 565 567 576-577 586 600 606 615 621 624 627 632 634 647 653 660 667 683 689 696 714

Tissue Origin	RNA Source	Hyseq Library Name	SEQ ID NOS:
adult heart	GIBCO	AHR001	28 39 57 64-65 75 79 89 97-98 108 117 134 144 157 159-160 164-166 169 171 174 184 192-193 203 207 220 243 256 258 266-267 281 314 316 318 328-329 331 338-339 341 346 348 354 356-357 366-367 369 371 377-379 382 385-386 388 393 395-396 399-401 403 415 420 422 425 431-432 435-436 445 451 459 465 472-473 477 483 486 488 490 496 501 503 508 515 519-520 526 528 531 533-534 537-538 540-541 544 546 552 556-557 562-563 566-571 573 576-581 583-584 586-587 594 602 606 608 611 613-615 618 620-621 626-628 632 634 641 643 646 648 653 659 667 676 678 687 689 696 703-704 708 711 714 729-730
adult kidney	GIBCO	AKD001	3 28-29 48 56-57 67 79 84 93 106 117 134 138 140 144 156 160-164 168-170 172 177 183 188-189 192-193 199 203 207 235 251 257 275 319 321-323 328-330 337 346-347 349 354-356 360 367-369 371 375 378-381 383-386 388-389 392 396-397 399 401 404 407 409 411-412 415-416 420-422 427 432 436-437 439-440 444 451-456 458-459 464-465 468 470 472-473 477 481 483 486-487 492 496 501 503 505-506 508 511 513-516 518 524 526 529 533 535 537-541 543 545-546 548 552 557 559-560 562-563 565-569 572-574 576-577 579-587 589-591 593-594 602 604-607 613-614 617-618 620-624 627-628 630 632-635 637-638 640-642 644-645 652 662 664 667-668 677 682 685 687 689 694-696 698 703 716 723 728-729 732 734
adult kidney	Invitrogen	AKT002	92 136 154 160 164 178 271 314 347 353 360 367 376 378-379 386 391 402 409 423 432 449 451 477 490 494 503 526 528 531 534 538-539 541 545-546 559 566 579 584 588 594 602 613 621 624 632 647 652 689
adult lung	GIBCO	ALG001	56-57 67 69 98 113 134 144 164 172 191-192 270 321 328 338 369 371 374 378 380 388-389 396 405 411 416 424 443-444 456 473-474 482-483 497 508 518 529 531 534 536

Tissue Origin	RNA Source	Hyseq Library Name	SEQ ID NOS:
			540 552 556 559 563 568 573 579-580 585-586 588-589 593 601-602 606 612-613 618 634 662 667 685 696 702 726 729-730
lymph node	Clontech	ALN001	28 57 79 113 164 172 179 193 240 325 332 367 378-379 386 388 402 485 526 580 586 603 613-614 621-622 628 634 662 667 686 734
young liver	GIBCO	ALV001	3 24 28 54 60 117 134 137 154 160 193 196 242 273 316 328-329 334 351 354 370-371 388 392 395-396 401 406 411 415 432 435 439 448 454-455 477 483 486-487 495 506 509 514 518 523-524 526 529 531 534 537-538 540 544 548 566 568 571 573 579 587-588 591 594 602 621 641 645 686 713 723
adult liver	Invitrogen	ALV002	3 24 27 56-57 65-66 71 79 92 97 106 134 140 164 192 200 214 220 232 240 242 271-272 291 313 316 328 347 349-350 353 355 357 368-369 371-372 378-379 381-382 385 397 430 435 448 457 459 471-472 475 485 487 502 505-506 511 520 530-531 533-534 537 540-541 543 548 566 574-575 579 582 588 590 612 623 640 648-649 681 687 689 710 714
adult ovary	Invitrogen	AOV001	3 10 14 28 54 56-58 62 65-66 68 73 75 79 98 127 144 154 162 164-165 172-174 182 186 188-189 192-196 206 213 224 234-235 241 243 248 253 261 273 275 289 314 316 321-322 325-327 329-331 333-334 336-338 340 343 345-348 354-357 367 369 371-372 378 382 386 388 395-397 399-402 404 407 411 415-416 419-420 425 427 429 431 435-437 441 444 451 453-459 465 468-470 472-475 481 485 490 494 496 501 503 509-510 513 517-518 522-524 526 528-529 531-534 537-542 545-546 548 552 554 556-557 559-560 562-563 565 567-569 572-579 581-582 584-588 590-591 593-598 602-604 606 611-615 618 620-623 627 629 631-632 635-638 643 647 652-654 657 659 661-662 667 674-675 677-678 682 684 689 693 695-698 703 705-707 714 717-718 723 729 731 738
adult placenta	Clontech	APL001	172 224 239 363 371 392 437 531 534 622 690 696

Tissue Origin	RNA Source	Hyseq Library Name	SEQ ID NOS:
placenta	Invitrogen	APL002	57 66 122 161 172 241 326 329 334 369 388 407 427 429 436 459 464 506 508 511 539 541 545 566 573 575 590 597 637 648 690
adult spleen	GIBCO	ASP001	28 57 65 78 93 95 117 134 156-157 172 186 188 194 214 273 314 319 331 334 338 344 354 371 374 392 436 457 471-473 478-479 481 483 515 526 528-529 541 548 557 559 563 565 569 573 585-587 603 606 613 615 618 621-622 627 632 634 637 643 654 671 689 696-698 701 712 739
testis	GIBCO	ATS001	3 67 134 160 192 235 327 329 337 342 371 375 378 380-381 396 399 415 431 436 441 451 472 477-478 483 486 494 496 503 522 524 526 531 533-534 538 541-542 546 548 557 568 573 577 579 581 584 594 596 618 641 658 662 689 700 714 729-730
adult bladder	Invitrogen	BLD001	28 57 112 161 164 172 192 194 250 334 354 370 397 404 487 513 526 531 534 545 572 599 602 620 634 651 659 672 689 713 725
bone marrow	Clontech	BMD001	10-11 28 31 54 57 62 75 78-83 88 131-133 135-137 141-143 157 159 164 171-173 176-177 187-189 192 195 200 202 205 207 218 225 282 314-318 325 330 334-335 337 346-348 367 369 372 378 383 386 388 395 401 405 412-413 416 422 436 442-443 447 449 455 465 472 475 477 503 516 523 528-529 533-534 539 545 551 556 559 563 565-567 571 573-574 576 579-586 594 601-602 606 613 620-623 628-629 634 638 642-643 646 656 659 666 686 689 691 696 698-699 703 705 714 720 726 729
bone marrow	Clontech	BMD002	2 15 23 35 49 54 57 59 78 81 114 156-157 164 171-172 189-190 202 223 240 325 334 346 357 367 379 381-382 388 397 412 454 465 482 490 509 516 526 535 537 563 566 579 595 600 638 640-641 654-655 676 689 714
adult colon	Invitrogen	CLN001	48 79 94 138 162 167 189 333 368-369 375 386 404 409 414 435-436 455 470 525 541 548 553 567 603 634 656 659 689 694 721
adult cervix	BioChain	CVX001	3 28 35 54 57 79 83 95 97 113 117 154 162 164 172 176 220 235 248-

Tissue Origin	RNA Source	Hyseq Library Name	SEQ ID NOS:
			249 321 327 329 333 338 346 348 354 356 362 367-368 371 374-375 378-379 386 388-389 395 401-402 404 407 420 429 431 437 443 451 459 468 475 477 479 483 485 490 493-494 496 506 508 511 517 526 528 531 534 544 550 552 559 566 569 571-573 575-576 581-583 588 590 593-594 604 606 614 622 628 631-635 639 661-662 675 689 692 695 715 718 738
endothelial cells	Strategene	EDT001	3 28 31 39 54 58 65-66 79 89 144 160 173 187 189 191 193 197-199 207 220 230 267 273 314 324 326 329-331 336 347 354 369 372 378-379 384 386 388 391-394 396-397 399 401 407 420 422 429 431-432 435-437 444 449 451 455 459 465 472 474-475 481-482 486 490 499-501 503 506 511 513 515-517 520 522-524 528 531-534 538-539 541 545-546 548 550 552 557 559-560 563 565 567 569 571 573 577 579-580 583-584 587-590 593-594 596-597 599 602 611 614-615 618 620-621 624 630 632-634 637-638 642-643 647-648 651 675 677 680 682 694 696-698 703 708 714 719 724-725 728-730 734
Genomic clones from the short arm of chromosome 8	Genomic DNA from Genetic Research	EPM001	38 41-45 118-121 164 198 292-312.
Genomic clones from the short arm of chromosome 8	Genomic DNA from Genetic Research	EPM003	43 164 295
Genomic clones from the short arm of chromosome 8	Genomic DNA from Genetic Research	EPM004	121 164 306 482
Genomic clones from the short arm of chromosome 8	Genomic DNA from Genetic Research	EPM006	293

Tissue Origin	RNA Source	Hyseq Library Name	SEQ ID NOS:
esophagus	BioChain	ESO002	513 526
fetal brain	Clontech	FBR001	57 468 563 634
fetal brain	Clontech	FBR004	162 186 254 265 491 582
fetal brain	Clontech	FBR006	1-2 5-6 11-12 22-23 49 57 62 73 94 103 114 162 164 172 189 193 203 218 240 244 251-252 259 279 330-331 334-335 346-347 351 367 378 386 388-389 399 413 420 422 424 434 442 444 448 465 468 470 472-473 490 496 501 503-504 511 520 524 528 532-533 539 544-546 548 551 553 563 571 573 576 587 591 601 613 615-616 620-621 628 634 641 644 648 653 657 662 672-673 689 691 698 706 714 718 725-728 733 735-739
fetal brain	Clontech	FBRs03	444 587
fetal brain	Invitrogen	FBT002	17 66 157 162 164 186 190 193 250 270 324 331 334-335 338 346 354-355 374 382 389-390 426 429-430 437 442 453 467 471 475 481 485 491 507-508 513-514 526 528 532 540 544 548 550 552-553 557-558 563 565-566 590 593 602 612 615 637 641 648 654 662 672 676 692 703
fetal heart	Invitrogen	FHR001	57 75 164 547
fetal kidney	Clontech	FKD001	57 164 172 179 188 194 208 218 230 240 250 330 334 369 388 401 413 439 454 465 529 546 550 573 576 581 583 594-596 602 634 648 667 676 689 698 706
fetal kidney	Clontech	FKD002	2 560
fetal kidney	Invitrogen	FKD007	565 596-597
fetal lung	Clontech	FLG001	75 164 355 386 428 455 513 524 528 631 689
fetal lung	Invitrogen	FLG003	30 157 162 169 188 243 253 256 283 330 392 400-401 404 407 424 428 435-436 479 506 508 520 530-531 534 572 578 584 602 611 613 631 654 658 662 676 689 701 716
fetal lung	Clontech	FLG004	371
fetal liver-spleen	Columbia University	FLS001	2-3 5 26 29 31 35 48 54-58 60 62 65 67 70 74-77 79-80 84-87 89 92 96 98-100 104 117 122-130 138 140 144-158 160 162 164 172-173 185-186 188-189 192-194 196 199-200 207 214 218-219 237-238 241 269 273 280 282 314-316 318-322 324 327 329-331 334-335 337 340 345 348-350 354-358 363-364 367-371

Tissue Origin	RNA Source	Hyseq Library Name	SEQ ID NOS:
			373 375 377-380 382-383 385-386 388 394-396 399 402 409 411-412 418 420-422 424 427 431 435-437 440 442 448-451 453 455 459 461 464-465 470 472-473 475 477-478 480-485 488-490 501 503 505-506 509 511-513 515-518 520 522-524 526-534 538-539 541 543-547 549-550 552-553 556-557 559-564 566-567 569 571 573 576 578-580 582-587 589 591-594 596-597 599-600 602 611-615 618 620-625 627-628 631-636 638 641-642 646 648 651 659-660 662-664 667-668 675-678 680-681 684 689-690 696-698 709 714 723 738
fetal liver-spleen	Columbia University	FLS002	15 31-32 39-40 47-49 52 56 60 65 69 72 75 78 84 97-98 100 104 115 123 138 140 144 146 152-153 157 161 164 172-173 182 188 194 196 199 220 241-242 246 249 253 255 266 273-275 280-281 288-291 314-316 318-319 321-322 324 329-331 336-339 343 347-350 353-354 357-358 363 367 369-370 372 374 378-380 382-383 386 388-389 393-397 399 405 407 409-410 412 421 424 432 435 439 448 450-451 453-457 459 461 464-465 470 472-475 477 479-481 483 485 488 490 497 501 503 506 509 511-513 516-518 520 524 527-528 531-532 534 539 541-546 556 559-560 565-566 569 571 574 576 579 582-586 588 590 597-599 602-604 606 615 618 620-621 623 625 627 632-634 639 641 644 648 666-668 675-676 681 684 689-690 696-697 701 703 714 719 723 734-735
fetal liver-spleen	Columbia University	FLS003	60 79 157 190 690
fetal liver	Invitrogen	FLV001	3 27 35 48 50 56-57 66 75 92 94 105 157 161 164 176 189 209 220 243 272 324 328 333 335 353 369-370 381 392 396 429-430 435 439-440 442 444 465 471 483 487 502 506 513-514 519 534-535 537 548 554 566 568 576-577 580 582 590 613 621 645 648-649 689
fetal liver	Clontech	FLV002	343
fetal muscle	Invitrogen	FMS001	51 79 97 108-110 166 194 196 266 341 352 380 389 402 407 444 464

Tissue Origin	RNA Source	Hyseq Library Name	SEQ ID NOS:
			475 501 513 524 546 552 554 560 570 572 598 605 628 634 649 675 703-704 714 737
fetal muscle	Invitrogen	FMS002	524
fetal skin	Invitrogen	FSK001	31 33 35 48 57 63 67 75 112-114 117 157 162 164 172 178 180 188 196 220 243 254 319 324 328 330 333-334 367 369 371 375 379-383 386 388-389 400 404 407 412 419- 420 429 444 455 472-473 491 499 503 508 511 514 517 522-524 529 531 534 537 540 542 547 552 554 556-557 560 563 565 567 571-572 574 576 579 590 596 599 616 621 625 627 631-632 634 639-640 648 653-654 662 689 708 714
fetal skin	Invitrogen	FSK002	501 537
fetal spleen	BioChain	FSP001	465 729
umbilical cord	BioChain	FUC001	27-28 35 57 68 83 105 136 157 159- 160 164 188 191 225 279 315-316 321 328 334 363 367 369 378-379 383 386 388-389 392 397 406-407 413 415-416 427 440 449 455 458 461 464-465 468 473-475 479 485- 486 488 490 496 514 517 522 524 526 528-529 531 533-534 538 540 546 550 552 556-558 572 582 584- 585 587-588 594-597 602 606 613 616 618-619 631 634 637 651 689 696 698 706 729
fetal brain	GIBCO	HFB001	3 5 22 26 46 53 66 73 94 117 134 139 164 172-173 188-189 212 215 230-231 248 251 262 288-289 316 325 329-331 334 337-338 348 352 365-367 369 371 377-379 385-386 388 392 394 396 400 403 420 422 429 437 444-446 449 451 455 459 461-463 466-468 472-473 475 477 481 483 485-486 488 490-491 496 503-504 506 513 523-524 529 532- 533 539-541 545 548 550 552 557- 560 563 565-566 569 571 576-577 579-580 583-584 586 590 593-594 596-599 601-602 604 606 611 613 615 618 621-623 627-628 634-635 637 641 643 647 662 664-665 667 675 677 680 689 695-697 703 726
macrophage	Invitrogen	HMP001	97 518 532 569
infant brain	Columbia University	IB2002	28 46 56-57 59 67 75 78 109 117 122 129 144 157 162 164-165 172 176 180 190 193 212 220 226 236-

Tissue Origin	RNA Source	Hyseq Library Name	SEQ ID NOS:
			237 251 261-262 316 318 324 328-330 334-335 337 340 354-356 361 364-365 367 369 371-373 377-380 382 385-386 389 392 395 397 400 411 416 421-422 429 432 436 438 444 448 451 456 464-465 469 471-475 484 486 496 504-506 511 520 524 526 529 531 533-534 537-540 544-546 548 553 556 558 562 565 567 576 579-580 582 584 586 589-590 593 597-598 602 613-614 618 620-621 627-628 632 634 636 641 650 654 659 662 667 683 689 721 730
infant brain	Columbia University	IB2003	46 54 75 109 156 164 220 244 251 314 324-325 331 335 340 361-362 367 369 377-379 400 408 438 442 456 460 464 469 472 496 506 523-524 526 529 538 540 544-545 547 558 560-562 565 567 569 579 584 598 602 613 615 621 627 632 634 637 639 650 738
infant brain	Columbia University	IBM002	262 340 432 436 438 472 531 534 569 613 634
infant brain	Columbia University	IBS001	162 231 283 331 369 385 438 444 472 506 513 523 531 534 580 615 636 689
lung, fibroblast	Strategene	LFB001	28 54 57 65 172 188 233 321 331 340 347 367 369 378-379 388 401 451 459 475 479 503 511 522 524 532 534 559-560 573 580 583 587 597 615 632 634 638 686 689 708
lung tumor	Invitrogen	LGT002	3 7 21 24 26 28 31 54 56-57 62-63 66 92-93 101 109 112 162 164 171-172 176 183 188-189 192-193 196 201-202 223 230 235 259 273-274 316 321 329-331 333-334 338 345 347-348 356 367 369 371-372 378-379 381-382 386 388-390 396 399-404 406 409 416 424-425 427 429 432 436-437 439 451 455-456 459 464-465 467 473 475 484-486 490 499 502-503 506 508 511 513-514 517-518 522 524 526 528 531-532 534-535 538-539 541 543-546 553 557-559 563 567-568 571 573 575-576 579-580 585-588 590-591 593-594 598 601-604 609 611-613 615 621 627-628 631-632 636-637 645 648 651-652 654 662 667 672 677 681 683 689 698 701-702 714 718 724 726 729 734
lymphocytes	ATCC	LPC001	4 31-32 35 57 65-66 70 110 116 156

Tissue Origin	RNA Source	Hyseq Library Name	SEQ ID NOS:								
			162 164 230 243 250 282 287 326 328-330 334 336 346-347 359 378 386 388 397 407 414 416 419 472 497 520 525 539 545 549 551 582 590 606 615 618 621 631 634 686 692 698 701 714								
leukocyte	GIBCO	LUC001	4 7 9-11 23 28 31 35 39 54 65 75-76 79 90 97 110 117 134 152 157 159 162 164-167 171 173 176 188 193 199 204 207 220 244 253 255 314 316 318 321 324 326 329-330 337-339 346-347 352 354 356 367 369 371 378-379 382 388-389 392 396-397 400-402 405 415-416 420 422 429 432 435-436 443-444 449 454-455 457-459 465 479 481-486 491 497 501 503-504 506 508 511 514 516 520 523-525 529 532-533 535 538-539 545 548 552-554 556 559-560 562-563 565-566 569 571-573 576 579 581 585-587 590 593-594 598 600-602 604 606-609 613-614 618 620-622 624 627 630 632-634 636 638 643 645 660-662 667 678 682 684 686 689 691 693 696-698 714 726								
leukocyte	Clontech	LUC003	11 54 97 152 164 330 479 546 564-565 593 613 627 634 646 696 729								
melanoma from cell line ATCC #CRL 1424	Clontech	MEL004	2 57 67 79 164 171-173 188 193 196 232 321 337 341 346 367 379-380 388 407 427 454 472 477 482 501 520 539 545 552 556 579 588 593 598 611 621 631 648 665 714 730								
mammary gland	Invitrogen	MMG001	3 20-21 29 31 54 56-57 63-66 79 94 109 112-113 117 122 125 138 141 154 160 162 164 172 176 186 189 192 204 214 220-221 232 238 251 255 257 273 276-278 324 326 328-331 333 335 337 341-343 347 354-355 357 367-371 374-375 379 382-386 388-392 397 399-400 404 406-408 410-411 425 431 435-436 444 451 455 457 459 461 464-465 470-471 475 479 483 485 487-488 491 501 506-508 511 513-519 523-524 526 529 531-532 534-535 537 539-540 542-545 552-554 557-560 563 566 569 572 577 580 584 587-588 590 597-598 602 604-605 609 611 613 615 624 627 631-634 637 639-640 643 648-649 654 664 669-670 672-673 676-679 681 689 691-695 697-698 706 714 731 734 737								

Tissue Origin	RNA Source	Hyseq Library Name	SEQ ID NOS:
induced neuron cells	Strategene	NTD001	36 57 164 284 388 397 420 481 485 501 524 528-529 539 542 545 560 571 579 582 595 602 620 637 654 667 689 730
retinoid acid induced neuronal cells	Strategene	NTR001	524 584 693
neuronal cells	Strategene	NTU001	36-38 120 204 331 351 354 357 386 388 399 411 442 459 516 533 539 545 565 586 606 615 621 637-638 642 646 648 714 730
placenta	Clontech	PLA003	503 579 690
prostate	Clontech	PRT001	15 40 65 164 187 207 229 337 348 367 375 377-378 395 406 416 428 458 468 476 511 524 526 531 534 538 555 559 563 576 584 597 613 622 624 631 642 667 672 677 684 724 734
rectum	Invitrogen	REC001	57 67 164 260 331 343 370-371 380 382 384 404 409 436 444 475 485 498 513 524 526 540 542 552 554 581 615 619 624 627 634 654 659 671 689 714
salivary gland	Clontech	SAL001	21 84 106-107 152 179 238 246 255 273 287 371 378 383 401 407 420 455 475 477 509 512 515 521 541 548 565 570-571 573-574 589 606 628 634 636 652 689 703 738
skin fibroblast	ATCC	SFB002	192
skin fibroblast	ATCC	SFB003	464
small intestine	Clontech	SIN001	57 66 71 98 116 150 164 172 327 336 343 362 367 379 388 397 401-402 417 429 433 436 496 526 528 533 590 602 620 631 634 667 678 711
skeletal muscle	Clontech	SKM001	3 57 66 101 164 172 256 266 325 379 385 449 468 485 487 518 552 554 566-567 570 582 584 590 606 611 628 631 738
spinal cord	Clontech	SPC001	10 54 57 66 75 100 102 114 144 164 175 193 199 215-216 325 334 337 367 370 380 385-386 406 411-413 419 429 466 470 486 518 526 529 531 534 574 579 585 587 590 604 620-621 631-632 634 642 644 648 659 688-689 691 693 695
adult spleen	Clontech	SPLc01	478 572
stomach	Clontech	STO001	26 90 164 218 358 369 386 468 475

Tissue Origin	RNA Source	Hyseq Library Name	SEQ ID NOS:
			485 526 532 569 576 579 581 586 603 631 634 677 682 689
thalamus	Clontech	THA002	17 31 57 66 109 127 164 217-218 262 315-316 324 330 357 369 386 388 400 406 435 456 459 464 468- 469 515-516 537 540-541 556 566 574 590 611 622 631 634 644 648 656 677-678 680
thymus	Clontech	THM001	6 15 26 54 79 164 172 187 193 201 264 291 315 329 331 351 356 367 397-398 401 407 412 424 427 429 435-436 443 451 474 478 482 549 563 565 567 569 576 578 581-582 610 615 621 631-632 634 648 662 667 669 679 689 693 696
thymus	Clontech	THMc02	3-6 8 11 16 18 34 58-59 67 132 149 162 164 167 172-173 186 188-189 193 200 203 216 223 232 239 255 263 265 319-320 331 333-334 355 359 370 373 377-380 382 387-390 393 395 398-399 402 404 408 420 427 434 436 467 475-476 503 508 518 524 526 532 540 560 563 565 571-572 576-577 579 582 598 601 603 612-613 615 621 627 632 634 639 641 648 651 657 659 662 672 677-678 684-686 689 696 699 706 714-716 722 726-729 732
thyroid gland	Clontech	THR001	5 29-30 40 54 57 66 72 79 117 144 160 164 166 170 172 176 183 188- 189 208-209 219 230 285-286 314 318 327 331 335 338 344 347 354 363 367 375 377-380 382 384-386 388 393 397 399 401-403 419 422 429 436 442 444 451 456 458-461 464 467-468 470 472-473 476-477 481 488 494 503 508-509 511 516 519-521 524 528-529 533 537-538 543 548 557 559-560 563 565-566 571-574 576 582 585 587 590-591 593-594 596-597 606 614-615 620- 621 623-624 627 631-634 640 650- 651 653 662 667 669-670 675 679 689 708 712 714
trachea	Clontech	TRC001	156 164 171 240 375 378 390 400 422 468 484 565 574 581 585 587 631 654 689 714
uterus	Clontech	UTR001	65 77 79 101 164 220 367 369 451 468 526 530 533 548 554 559 562 568 573 582 594 637 648 689

Table 2 - Nearest Neighbor Results

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
1	1000	gi7021484	Mus musculus	secretory carrier membrane protein 4	567	85
2	10017	R06463	Homo sapiens	Derived protein of clone ICA13 (ATCC 40553).	848	100
3	10020	gi1065967	Caenorhab-ditis elegans	similar to other protein phosphatases 1, 2A and 2B	325	36
4	10024	G03460	Homo sapiens	Human secreted protein,	439	98
5	10032	Y12505	Homo sapiens	Human 5' EST secreted protein	136	87
6	10042	Y29511	Homo sapiens	Human lung tumour protein SAL-25 1st predicted amino acid sequence.	701	100
7	1006	Y92324	Homo sapiens	Human alpha-2-delta-D polypeptide from splice variant 1.	763	100
8	10064	gi4589375	Homo sapiens	Gab2	425	58
9	1007	gi7018398	Homo sapiens		151	75
10	1008	gi896065	Homo sapiens	protein that is immuno-reactive with anti-PTH polyclonal antibodies	1226	99
11	10088	gi3779244	Homo sapiens	Metallo-protease 1	1512	98
12	10089	gi2947232	Homo sapiens	membrane associated guanylate kinase 2	523	100
13	10091	gi3347863	Mus musculus	cAMP-specific cyclic	223	54

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Acces-sion No.	Species	Description	Smith-Water man Score	% Identity
				nucleotide phosphodi-esterase PDE8; MMPDE8		
14	10098	gi6979311	Homo sapiens	cysteine-rich repeat-containing protein S52 precursor	1068	100
15	10102	G01395	Homo sapiens	Human secreted protein,	297	88
16	10103	gi854733	Rattus norvegicus	casein kinase 1 gamma 1 isoform	293	84
17	10104	Y60017	Homo sapiens	Human endometrium tumour EST encoded protein 77.	154	100
18	10108	G03290	Homo sapiens	Human secreted protein,	215	97
19	10110	gi7292299	Drosophila melanogaster	CG1271 gene product	208	46
20	10111	gi4512334	Rattus norvegicus	Ca/calmodulin-dependent protein kinase kinase alpha, CaM-kinase kinase alpha	822	89
21	10113	Y41694	Homo sapiens	Human PRO382 protein sequence.	633	97
22	10114	gi349075	Rattus norvegicus	calmodulin-binding protein	531	99
23	10116	gi162981	Bos taurus	endozepine-related protein precursor	937	87
24	10121	gi8979743	Canis familiaris	Band4.1-like5 protein	643	100
25	10126	Y99420	Homo sapiens	Human PRO1486 (UNQ755) amino acid sequence	607	100
26	1013	gi804750	Homo sapiens	protein tyrosine	614	73

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
				phosphatase		
27	10136	W02105	Homo sapiens	Human L-asparaginase.	1243	98
28	10142	Y35924	Homo sapiens	Extended human secreted protein sequence,	862	89
29	10148	gi3334982	Homo sapiens	R27216_1	329	98
30	1015	G02485	Homo sapiens	Human secreted protein,	120	72
31	10154	gi10798804	Homo sapiens	sperm antigen	2607	98
32	10175	Y96864	Homo sapiens	SEQ. ID. 37 from WO0034474.	536	100
33	10196	gi553621	Homo sapiens	profilaggrin	346	39
34	10198	gi1419016	Mus musculus	odorant receptor	281	53
35	10200	Y57903	Homo sapiens	Human transmembrane protein HTMPN-27.	448	100
36	10208	gi4062492	Escherichia coli		505	100
37	10212	gi8825259	Escherichia coli	ORF_f141	625	96
38	10213	gi4062778	Escherichia coli	Hypothetical protein HI0761	773	98
39	10214	gi6693832	Rattus norvegicus	opioid growth factor receptor	661	44
40	10227	G01360	Homo sapiens	Human secreted protein,	384	100
41	10236	gi1651257	Escherichia coli	.	373	100
42	10241	gi2769262	Escherichia coli	catabolite gene activator protein	178	96
43	10245	gi1789539	Escherichia coli	orf, hypothetical protein	679	98
44	10246	gi882492	Escherichia coli	ORF_o179	488	97
45	10247	gi1742149	Escherichia coli	Sn-glycerol-3-phosphate	323	100

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Acces-sion No.	Species	Description	Smith-Water man Score	% Identity
				transport system permease protein UgpA.		
46	10282	Y29817	Homo sapiens	Human synapse related glycoprotein 2.	521	96
47	1031	gi6435130	Mus musculus	putative E1-E2 ATPase	990	86
48	1040	gi854124	Homo sapiens	Human giant larvae homologue	471	63
49	1043	gi3882285	Homo sapiens	KIAA0782 protein	154	61
50	1051	gi178216	Homo sapiens	anion exchange protein 1	172	100
51	1053	Y76748	Homo sapiens	Human protein kinase homologue, PKH-1.	180	92
52	1062	gi9650144	Mus musculus	ADAM 4 protein precursor	492	65
53	1063	gi2393880	Drosophila melanogaster	A-kinase anchor protein DAKAP550	580	60
54	1066	gi2746788	Caenorhabditis elegans	contains similarity to transacylases	607	35
55	107	G00357	Homo sapiens	Human secreted protein,	183	77
56	1071	gi9105937	Xylella fastidiosa	Acetylgluta-mate kinase	505	36
57	1085	R95913	Homo sapiens	Neural thread protein.	257	55
58	1086	Y76332	Homo sapiens	Fragment of human secreted protein encoded by gene 38.	387	58
59	1088	gi4589642	Homo sapiens	KIAA0999 protein	873	99
60	109	gi763431	Homo sapiens	KIAA0999 protein	360	85
61	1095	Y94907	Homo sapiens	Human secreted	701	97

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
				protein clone ca106_19x protein sequence		
62	1102	Y07096	Homo sapiens	Colon cancer associated antigen precursor sequence.	1982	100
63	1105	Y84907	Homo sapiens	A human proliferation and apoptosis related protein.	983	91
64	1108	gi1398903	Mus musculus	Ca2+ dependent activator protein for secretion	1307	89
65	1109	Y91524	Homo sapiens	Human secreted protein sequence encoded by gene 74	2400	99
66	1113	gi1657462	Sus scrofa	calcium/cal-modulin-dependent protein kinase II isoform gamma-E	1348	94
67	1117	Y32169	Homo sapiens	Human growth-associated protease inhibitor heavy chain precursor.	2831	97
68	1118	gi3063517	Homo sapiens		1138	98
69	1125	gi8248285	Homo sapiens	sphingosine kinase type 2 isoform	1290	98
70	1132	Y94918	Homo sapiens	Human secreted protein clone dd504_18 protein sequence	437	59
71	1143	gi45806	Homo sapiens	prepro-major	209	40

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
		77		basic protein homolog		
72	1146	gi182395	Homo sapiens	focal adhesion kinase	131	87
73	1161	W90962	Homo sapiens	Human CSGP-2 protein.	931	100
74	117	W69428	Homo sapiens	Human secreted protein bp537_4.	159	93
75	1170	gi34339	Homo sapiens		586	87
76	1175	gi7960243	Homo sapiens	SNARE protein kinase SNAK	308	100
77	118	gi5360093	Homo sapiens	NY-REN-18 antigen	178	96
78	1183	gi2920237	Homo sapiens	helix-loop-helix phosphoprotein	361	91
79	1193	gi1899186	Rattus norvegicus	polysialyltransferase	171	76
80	1195	gi1399462	Homo sapiens	serine/threonine-protein kinase PRP4h	208	71
81	1198	gi181535	Homo sapiens	defensin precursor	150	71
82	1201	gi5668935	Rattus norvegicus	plasma membrane Ca2+ ATPase isoform 1kb	244	73
83	1207	gi6224868	Homo sapiens	TANK binding kinase TBK1	716	86
84	1210	gi179646	Homo sapiens	complement component C1s	242	61
85	1211	gi1483187	Homo sapiens		296	65
86	1214	gi7800638	Streptococcus pneumoniae	PspA	121	37
87	123	Y44810	Homo sapiens	Human Aspartic Protease-2 (NHAP-2).	218	93
88	1259	gi2116672	Homo sapiens	EAR-1r	128	70
89	1266	gi7243125	Homo sapiens	KIAA1372 protein	403	53
90	1270	gi1289445	Homo sapiens	diacylglycerol kinase epsilon DGK	125	96

SEQ ID NO:	SEQ ID NO: in USSN 09/48 8,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
91	1290	gi14293 71	Drosophila melanogaster	ubiquitin-specific protease	470	41
92	1291	Y66755	Homo sapiens	Membrane-bound protein PRO1185.	993	100
93	1296	gi96520 87	Homo sapiens	scavenger receptor cysteine-rich type 1 protein M160 precursor	1183	99
94	1299	gi73003 98	Drosophila melanogaster	CG7683 gene product	397	40
95	1317	gi36951 15	Rattus norvegicus	CL1AA	216	100
96	132	gi18717 1	Homo sapiens	12-lipoxygenase	176	97
97	1330	Y12482	Homo sapiens	Human 5' EST secreted protein	65	44
98	1336	gi10798 814	Homo sapiens	MLTK-beta	2366	99
99	135	gi45609 0	Homo sapiens	effector cell protease receptor 1	190	74
100	1356	gi19305 7	Mus musculus	envelope polyprotein precursor	131	36
101	1369	gi45865 7	Homo sapiens	glucocorticoid receptor alpha-2	596	89
102	1392	gi84935 19	Mus musculus	nuclear localization signal binding protein	145	59
103	1408	gi31270 51	Rattus norvegicus	potassium channel regulatory protein KChAP	176	84
104	141	gi64536 13	Mus musculus	putative protein kinase	204	33
105	1424	gi29825 01	Homo sapiens	neuropathy target esterase	769	100
106	143	W50033	Homo sapiens	Human immunity related factor.	1201	98
107	1431	gi10644	Heterodera	hypothetical	133	36

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
		565	glycines	esophageal gland cell secretory protein 10		
108	1441	gi3044086	Myxococcus xanthus	unknown	149	32
109	1444	gi7248381	Homo sapiens	adaptor protein p130Cas	1615	97
110	1447	Y65168	Homo sapiens	Human 5' EST related polypeptide	403	97
111	1457	W19919	Homo sapiens	Human Ksr-1 (kinase suppressor of Ras).	227	77
112	1471	G02532	Homo sapiens	Human secreted protein,	97	59
113	1473	gi6062874	Homo sapiens	candidate tumor suppressor protein DICE1	581	100
114	1474	Y64896	Homo sapiens	Human 5' EST related polypeptide	197	100
115	1483	gi4362188	Homo sapiens	KIAA0037	295	76
116	1486	gi5852834	Homo sapiens	bridging integrator-2	133	64
117	149	gi3327162	Homo sapiens	KIAA0674 protein	2243	98
118	1503	gi1736785	Escherichia coli	.	1270	97
119	1506	gi4062298	Escherichia coli	YhhI protein	612	90
120	1513	gi4062346	Escherichia coli	.	556	94
121	1514	gi216609	Escherichia coli	PhoQ protein	661	90
122	1523	gi5712756	Rattus norvegicus	calcium transporter CaT1	1178	90
123	1527	gi1853980	Mus musculus	glucocorticoid receptor interacting protein 1	171	84
124	1536	Y17227	Homo sapiens	Human secreted	452	100

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SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Acces-sion No.	Species	Description	Smith-Water man Score	% Identity
				protein (clone ya1-1).		
125	154	gi8515090	Pinus taeda	putative arabinogalacta n protein	81	40
126	1544	gi3879933	Caenorhabditi s elegans	Similarity to Xenopus F-spondin precursor (PIR Acc. No. comes from this gene	134	34
127	1554	gi6523817	Homo sapiens	S1R protein	255	84
128	1555	gi6635205	Homo sapiens	beta-ureidopropiona se	210	90
129	1556	Y39286	Homo sapiens	Phosphodiester ase 10 (PDE10) clone FB93a.	161	61
130	1564	gi8977945	Streptomyces coelicolor A3(2)	putative secreted serine protease	231	45
131	1576	gi3025828	Rattus norvegicus	signal transducer and activator of transcription 4	183	97
132	1578	gi5106572	Homo sapiens	transcriptiona l activator SRCAP	758	98
133	1579	gi8575527	Homo sapiens	toll-like receptor 8	595	99
134	158	gi4060558	Mus musculus	protein kinase	168	70
135	1580	gi63340	Gallus gallus	c-Rmil	231	90
136	1588	gi2217931	Homo sapiens	PKU-alpha	127	92
137	1589	gi1272422	Mus musculus	Phosphoinositi de 3-kinase	720	99
138	159	gi2224629	Homo sapiens	KIAA0344	215	43
139	1600	gi1016012	Rattus norvegicus	neural cell adhesion protein BIG-2 precursor	543	93
140	161	gi6649583	Homo sapiens	kidney and liver proline	1651	98

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
				oxidase 1		
141	1612	gi406113	Rattus norvegicus	protein kinase I	125	89
142	1615	gi219992	Homo sapiens	phSR2	150	78
143	1620	gi5714636	Homo sapiens	serine/threo-nine protein kinase Kp78 splice variant CTAK75a	126	71
144	1644	Y13352	Homo sapiens	Amino acid sequence of protein PRO228.	2542	100
145	1647	Y99444	Homo sapiens	Human PRO1575 (UNQ781) amino acid sequence	704	100
146	1650	gi3789765	Homo sapiens	transmembrane receptor UNC5C	271	100
147	1663	W75258	Homo sapiens	Fragment of human secreted protein encoded by gene 26.	163	.96
148	1665	gi10432431	Homo sapiens	secreted modular calcium-binding protein	1428	99
149	1671	gi6708169	Mus musculus	inositol phosphatase eSHIPD183	169	97
150	1672	Y68773	Homo sapiens	Amino acid sequence of a human phosphorylation effector PHSP-5.	1030	99
151	1678	gi6063017	Homo sapiens	tousled-like kinase 1	132	86
152	1680	gi3510603	Homo sapiens	nuclear receptor co-repressor N-CoR	278	80
153	1692	gi1546084	Homo sapiens	farnesol receptor HRR-1	165	100
154	1698	gi520469	Oryctolagus cuniculus	597 aa protein related to	177	94

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Acces-sion No.	Species	Description	Smith-Water man Score	% Identity
				Na/glucose cotransporters		
155	1702	gi1043238 2	Homo sapiens		519	95
156	1704	Y91668	Homo sapiens	Human secreted protein sequence encoded by gene 73	214	75
157	1708	gi3080757	Mus musculus	growth factor independence-1B	457	78
158	1716	gi29653	Homo sapiens	putative oncogene	220	92
159	173	gi3452473	Rattus norvegicus	serine/threo-nine protein kinase TAO1	699	100
160	1731	Y27581	Homo sapiens	Human secreted protein encoded by gene No. 15.	774	100
161	1732	gi9652087	Homo sapiens	scavenger receptor cysteine-rich type 1 protein M160 precursor	1025	98
162	174	Y35923	Homo sapiens	Extended human secreted protein sequence,	1691	100
163	1740	Y53014	Homo sapiens	Human secreted protein clone fn189_13 protein sequence	337	60
164	1748	gi7770237	Homo sapiens	PRO2822	218	93
165	1751	gi8979825	Homo sapiens		306	50
166	1755	R95332	Homo sapiens	Tumor necrosis factor receptor 1 death domain ligand (clone	1184	62

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
				3TW).		
167	1762	gi7380947	Homo sapiens	Gem-interacting protein	1545	99
168	1776	gi5912265	Homo sapiens	hypothetical protein	224	100
169	1777	Y70461	Homo sapiens	Human membrane channel protein-11 (MECHP-11).	413	95
170	1781	R26060	Homo sapiens	Growth Factor Receptor Bound protein GRB-1.	398	98
171	1796	gi10312169	Homo sapiens	serine carboxypeptidase 1 precursor protein	1381	99
172	180	gi3002527	Homo sapiens	neuronal thread protein AD7c-NTP	477	61
173	182	gi7385131	Homo sapiens	HBV pX associated protein-8; XAP-8	2066	82
174	1820	G03249	Homo sapiens	Human secreted protein,	370	97
175	1822	gi473969	Oryctolagus cuniculus	one of the members of sodium-glucose cotransporter family	1048	90
176	1829	gi10440355	Homo sapiens	FLJ00012 protein	310	96
177	1832	gi165650	Oryctolagus cuniculus	phosphorylase kinase beta-subunit	146	96
178	1834	W75132	Homo sapiens	Human secreted protein encoded by gene 11 clone HCENJ40.	423	47
179	1837	gi60369	Saimiriine herpesvirus 2	ORF 48~EDLF5~sim. to EBV BRRF2	615	71

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
180	1859	gi9989696	Homo sapiens	ROR2 protein	645	87
181	1880	gi7340847	Mus musculus	chondroItin 4-sulfotransferase	275	40
182	1881	gi7573291	Homo sapiens		298	100
183	1890	gi3149950	Homo sapiens	ST1C2	183	94
184	1899	gi2143260	Homo sapiens	Phosphoino-sitide 3-kinase	346	98
185	19	gi1808582	Homo sapiens	U2AF1-RS2	224	46
186	192	G03192	Homo sapiens	Human secreted protein,	267	86
187	1922	gi4858558	Mus musculus	IB3/5-polypeptide	1206	78
188	1945	gi37261	Homo sapiens		1402	97
189	195	W67863	Homo sapiens	Human secreted protein encoded by gene 57 clone HFEBF41.	551	98
190	1957	gi406738	Homo sapiens	Shb	263	44
191	1969	Y41701	Homo sapiens	Human PRO708 protein sequence.	975	98
192	1970	gi3979817	Caenorhabditis elegans	Weak similarity to Human tyrosine-protein kinase CSK	254	49
193	1973	G00796	Homo sapiens	Human secreted protein,	365	98
194	1985	gi4558637	Homo sapiens	Putative homolog of hypoxia inducible factor three alpha	1420	99
195	1986	gi4455015	Homo sapiens	host cell factor homolog	367	50

SEQ ID NO:	SEQ ID NO: in USSN 09/48 8,725	Acces-sion No.	Species	Description	Smith - Water man Score	% Identity
				LCP		
196	2	G02532	Homo sapiens	Human secreted protein,	106	85
197	2004	gi10503 935	Homo sapiens	type A calpain-like protease	961	100
198	2023	gi16513 41	Escherichia coli	.	1075	97
199	2025	Y71069	Homo sapiens	Human membrane transport protein, MTRP-14.	540	100
200	2038.	gi85725 43	Homo sapiens	membrane-associated lectin type-C	686	98
201	2041	gi37400	Homo sapiens	trk-2h polypeptide	228	89
202	2043	W75096	Homo sapiens	Human secreted protein encoded by gene 40 clone HNEDJ57.	290	38
203	2068	G03394	Homo sapiens	Human secreted protein,	595	97
204	2072	gi21165 52	Rattus norvegicus	cationic amino acid transporter 3	1025	85
205	2076	gi15740 9	Drosophila melanogaster	fat protein	369	39
206	2078	gi10549 40	Gallus gallus	cSH-PTP2	605	94
207	2084	gi96631 28	Homo sapiens	hypothetical protein	874	99
208	2088	gi10567 590	Homo sapiens	sodium bicarbonate cotransporter-like protein	609	100
209	2089	gi17890 01	Escherichia coli	putative ATP-binding component of a transport system	961	98
210	2097	Y70460	Homo sapiens	Human membrane channel	258	96

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
				protein-10 (MECHP-10).		
211	2108	gi3207508	Rattus norvegicus	hexokinase	767	74
212	2111	gi6330233	Homo sapiens	KIAA1176 protein	3710	99
213	2118	W74797	Homo sapiens	Human secreted protein encoded by gene 68 clone HKIXR69.	156	96
214	2134	gi1780991	Homo sapiens	branched chain acyl-CoA oxidase	209	97
215	2146	gi7688148	Homo sapiens	hypothetical protein	1038	100
216	2149	gi2280485	Homo sapiens	KIAA0376	917	100
217	2153	gi1842429	Rattus norvegicus	ankyrin binding cell adhesion molecule neurofascin	592	88
218	2155	gi6526791	Homo sapiens	Eps15R	1126	100
219	2161	gi7300427	Drosophila melanogaster	CG7709 gene product	200	33
220	2163	Y52296	Homo sapiens	Human isomerase homologue-3 (HIH-3).	186	91
221	2173	W34526	Homo sapiens	hTCP protein fragment.	164	93
222	2178	gi3360512	Rattus norvegicus	Citron-K kinase	299	94
223	2180	Y74008	Homo sapiens	Human prostate tumor EST fragment derived protein #195.	261	41
224	2184	gi53041	Mus musculus		130	41
225	2186	gi401774	Homo sapiens	ribosomal protein S6 kinase 3	142	64
226	2190	gi577295	Homo sapiens	The ha1225 gene product is related to human alpha-	176	100

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
				glucosidase.		
227	2210	gi2055392	Rattus norvegicus	transmembrane receptor UNC5H1	620	90
228	2214	gi7861733	Homo sapiens	low density lipoprotein receptor related protein-deleted in tumor	1360	98
229	2223	gi7959189	Homo sapiens	KIAA1464 protein	884	99
230	223	W88627	Homo sapiens	Secreted protein encoded by gene 94 clone HPMBQ32.	300	77
231	2233	gi7839587	Homo sapiens	organic anion transporting polypeptide 14	1092	99
232	2237	gi10440400	Homo sapiens	FLJ00033 protein	1212	99
233	2251	gi5923786	Homo sapiens	zinc metallo-protease ADAMTS6	277	44
234	2256	W63698	Homo sapiens	Human secreted protein 18.	516	100
235	2259	gi4678722	Homo sapiens	hypothetical protein	387	36
236	2262	Y33741	Homo sapiens	Beta-secretase.	793	99
237	2265	gi7018545	Homo sapiens	hypothetical protein	608	94
238	2271	gi4186183	Homo sapiens	unknown	684	53
239	2273	gi7243035	Homo sapiens	KIAA1327 protein	1031	100
240	2280	gi5809678	Homo sapiens	sperm membrane protein BS-63	342	95
241	2286	gi6224691	Homo sapiens	Na+/sulfate cotransporter SUT-1	1221	99
242	2291	gi207621	Rattus norvegicus	uromodulin	345	50
243	2292	gi7296304	Drosophila melanogaster	CG5274 gene product	272	35
244	2294	Y28503	Homo sapiens	HGFH3 Human Growth Factor	320	98

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SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
				Homologue 3.		
245	2296	W88799	Homo sapiens	Polypeptide fragment encoded by gene 45.	223	86
246	2303	gi7110160	Homo sapiens	guanine nucleotide exchange factor	1212	99
247	2306	gi6434874	Mus musculus	calcium/calmodulin dependent protein kinase kinase alpha	576	84
248	2309	Y95433	Homo sapiens	Human calcium channel SOC-2/CRAC-1 C-terminal polypeptide.	1203	99
249	2313	gi7300943	Drosophila melanogaster	CG4677 gene product	689	79
250	2318	W48351	Homo sapiens	Human breast cancer related protein BCRB2.	202	59
251	2329	G01772	Homo sapiens	Human secreted protein,	311	84
252	2330	Y41729	Homo sapiens	Human PRO1071 protein sequence.	886	99
253	2342	gi3786430	Caenorhabditis elegans		268	42
254	2350	gi930104	Homo sapiens	protein-tyrosine phosphatase	571	79
255	2359	gi9392591	Homo sapiens	CC chemokine CCL28	679	99
256	2361	gi1666689	Mus musculus	alpha-NAC, muscle-specific form gp220	357	41
257	2374	G03172	Homo sapiens	Human secreted protein,	112	78
258	2387	gi1399197	Homo sapiens	pyruvate dehydrogenase kinase isoform 4	201	85
259	2401	G01757	Homo sapiens	Human	612	99

SEQ ID NO:	SEQ ID NO: in USSN 09/48 8,725	Acces-sion No.	Species	Description	Smith - Water man Score	% Identity
				secreted protein,		
260	2409	gi18112 3	Homo sapiens	cleavage signal 1 protein	194	86
261	2431	gi70185 47	Homo sapiens	hypothetical protein	473	50
262	2432	gi48264 96	Homo sapiens		327	39
263	2467	G03667	Homo sapiens	Human secreted protein,	640	97
264	2471	gi76881 48	Homo sapiens	hypothetical protein	1284	91
265	2478	gi79081 9	Homo sapiens	polycystic kidney disease-associated protein	615	90
266	2484	gi33270 80	Homo sapiens	KIAA0633 protein	1747	99
267	249	G03793	Homo sapiens	Human secreted protein,	139	65
268	2490	gi64673 71	Homo sapiens	thyrotropin-releasing hormone degrading ectoenzyme	757	98
269	25	G03203	Homo sapiens	Human secreted protein,	137	65
270	2504	gi40977 12	Homo sapiens	HBV associated factor	166	74
271	2506	gi20727 84	Homo sapiens	Na+/nucleoside cotransporter	201	95
272	2507	gi59240 07	Homo sapiens		335	38
273	2510	gi77173 85	Homo sapiens	beta-site APP-cleaving enzyme 2, EC 3.4.23.	383	89
274	2523	gi33970 9	Homo sapiens		150	96
275	253	gi36615	Homo sapiens	serine/threo-nine protein kinase	391	77
276	2533	gi45896	Homo sapiens	KIAA0985	191	61

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Acces-sion No.	Species	Description	Smith-Waterman Score	% Identity
		14		protein		
277	2536	gi2088685	Caenorhabditis elegans	strong similarity to the CDC2/CDX subfamily of ser/thr protein kinases	419	55
278	2544	gi1002425	Mus musculus	YSPL-1 form 2	280	80
279	2568	Y41738	Homo sapiens	Human PRO541 protein sequence.	379	49
280	2580	gi3004482	Rattus norvegicus	putative integral membrane transport protein	382	49
281	2593	gi7300049	Drosophila melanogaster	CG4525 gene product	582	50
282	2600	gi4530437	Homo sapiens	thyroid hormone receptor-associated protein complex component TRAP240	334	90
283	2625	gi8099652	Homo sapiens	toll-like receptor 9 form A	761	96
284	2641	gi148019	Escherichia coli	tolA	692	100
285	2667	gi1750387	Pseudomonas aeruginosa	Carbamoyl-phosphate synthetase large subunit	143	76
286	2670	gi4883437	Mus musculus	RNA binding protein	139	92
287	2673	Y66656	Homo sapiens	Membrane-bound protein PRO943.	1869	98
288	2676	gi3885978	Mus musculus	mismatch-specific thymine-DNA glycosylate	123	88
289	2680	gi6453438	Homo sapiens	hypothetical protein	465	82
290	2682	gi18417	Mus musculus	GATA-5	527	77

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
		56		cardiac transcription factor		
291	2684	gi9844920	Homo sapiens	nicotinic acetylcholine receptor subunit alpha 10	294	88
292	2695	gi1789764	Escherichia coli	putative transport	879	98
293	2697	gi349229	Escherichia coli	peripheral membrane protein	936	99
294	2698	gi4062194	Escherichia coli	.	737	100
295	2700	gi529240	Escherichia coli	homoserine kinase	578	100
296	2704	gi1552831	Escherichia coli	hypothetical	420	100
297	2712	gi1789672	Escherichia coli	putative ATP-binding component of a transport system	262	100
298	2716	gi4062409	Escherichia coli	Transmembrane protein dppC	382	100
299	2719	gi304976	Escherichia coli	matches PS00017: ATP_GTP_A and PS00301: EFACTOR_GTP; similar	921	95
300	2724	gi145856	Escherichia coli	nmpC	647	97
301	2725	gi1789473	Escherichia coli	putative transport protein	312	100
302	2728	gi1805561	Escherichia coli		222	97
303	2729	gi43248	Escherichia coli		655	91
304	2744	gi396299	Escherichia coli	similar to E. coli pyruvate formate-lyase activating enzyme	675	100
305	2749	gi1742648	Escherichia coli	.	592	100
306	2752	gi40622	Escherichia	Sensor kinase	357	100

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
		36	coli	CitA		
307	2762	gi1787795	Escherichia coli	putative LACI-type transcriptional regulator	342	100
308	2764	gi1799743	Escherichia coli	putative LACI-type transcriptional regulator	151	84
309	2768	gi405964	Escherichia coli	yohG	534	94
310	2774	gi4062338	Escherichia coli	.	387	97
311	2790	gi4062338	Escherichia coli	.	420	86
312	2800	gi1789805	Escherichia coli	putative transport	572	100
313	2811	gi5305333	Mus musculus	protein kinase Myak-S	421	49
314	2827	gi10047251	Homo sapiens	KIAA1588 protein	531	97
315	2830	G02872	Homo sapiens	Human secreted protein,	185	62
316	2836	gi191175	Cricetulus sp.	cAMP-dependent protein kinase alpha-catalytic subunit	1677	97
317	2851	gi558846	Homo sapiens	BCL2/adeno-virus E1B 19kD-interacting protein 3	220	61
318	2856	gi3882211	Homo sapiens	KIAA0745 protein	232	93
319	2866	gi6329708	Homo sapiens	KIAA1119 protein	1331	91
320	2874	gi2853033	Mus musculus	tousled-like kinase	203	82
321	2882	gi10185134	Schizosaccharomyces pombe	hypothetical zinc-finger protein	318	42
322	2886	G03797	Homo sapiens	Human secreted protein,	140	69
323	2899	gi4240325	Homo sapiens	KIAA0918 protein	170	53

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
324	2906	Y94988	Homo sapiens	Human secreted protein v11_1,	1738	100
325	2920	gi9453735	Homo sapiens		1926	100
326	2925	gi6434876	Homo sapiens	CDK4-binding protein p34SEI1	1210	100
327	2930	gi3941320	Schistosoma japonicum	myosin	208	28
328	2934	Y31645	Homo sapiens	Human transport-associated protein-7 (TRANP-7).	642	63
329	2955	G01165	Homo sapiens	Human secreted protein,	528	99
330	2967	gi7263960	Homo sapiens		466	100
331	2980	gi4589530	Homo sapiens	KIAA0943 protein	1849	94
332	2994	G03812	Homo sapiens	Human secreted protein,	124	61
333	2996	gi9857400	Homo sapiens	tumor endothelial marker 1 precursor	2666	98
334	2999	Y66697	Homo sapiens	Membrane-bound protein PRO1383.	2254	100
335	3	gi6289072	Homo sapiens	JM24 protein	930	100
336	3008	Y45219	Homo sapiens	Human CASB47 protein.	557	92
337	3013	gi5262678	Homo sapiens	hypothetical protein	1747	100
338	3041	Y73335	Homo sapiens	HTRM clone 1850120 protein sequence.	1315	99
339	306	gi4868443	Mesocricetus auratus	Mx-interacting protein kinase PKM	1867	95
340	3061	gi433338	Homo sapiens	protein-tyrosine kinase	3934	94

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
341	309	Y76145	Homo sapiens	Human secreted protein encoded by gene 22.	1313	99
342	3095	gi7300159	Drosophila melanogaster	CG14899 gene product	190	57
343	3098	gi532056	Homo sapiens	protein-tyrosine-phosphatase	2641	86
344	3105	gi2859887	Homo sapiens	mitochondrial outer membrane protein 19	192	71
345	3118	gi9929935	Macaca fascicularis	hypothetical protein	180	61
346	3124	gi8131903	Mus musculus	transient receptor potential-related protein	226	100
347	3126	Y02370	Homo sapiens	Polypeptide identified by the signal sequence trap method.	261	100
348	3166	gi7290860	Drosophila melanogaster	CG1531 gene product	534	42
349	3175	gi6649583	Homo sapiens	kidney and liver proline oxidase 1	1752	95
350	3176	gi7208438	Homo sapiens	long-chain 2-hydroxy acid oxidase HAOX2	1048	95
351	3188	Y02693	Homo sapiens	Human secreted protein encoded by gene 44 clone HTDAD22.	243	57
352	3191	gi7105926	Homo sapiens	calcium channel alpha2-delta3 subunit	300	96
353	3208	gi10334774	Homo sapiens	MUCDHL-FL	613	98
354	3226	Y87209	Homo sapiens	Human secreted protein sequence	3147	99

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
355	3235	gi6715135	Homo sapiens	Fanconi anemia, complementation group F	1947	99
356	3257	gi5441615	Canis familiaris	zinc finger protein	326	42
357	3282	G03002	Homo sapiens	Human secreted protein,	211	61
358	3289	gi3288457	Homo sapiens	PI3-kinase	5832	97
359	3296	gi7770139	Homo sapiens	PRO1722	293	64
360	3298	gi2198815	Ambystoma tigrinum	electrogenic Na+ bicarbonate cotransporter; NBC	1278	52
361	3303	gi4028015	Homo sapiens	potassium channel	1881	92
362	3305	gi5902966	Homo sapiens	very large G-protein coupled receptor-1	1770	100
363	3308	gi2199444	Homo sapiens	The first in-frame ATG codon is located at nucleotides NPPase.	3967	86
364	3325	gi3510234	Homo sapiens	R31237_1, partial CDS	192	94
365	3341	W78899	Homo sapiens	Human UNC-5 homologue UNC5H-1.	1614	90
366	3342	gi1478205	Mus musculus	PNG protein	341	70
367	3350	gi2739460	Bos taurus	regulator of G-protein signaling 7	2263	98
368	3372	gi7671663	Homo sapiens		375	79
369	338	Y84322	Homo sapiens	A human cardiovascular system associated protein kinase-3.	2606	100
370	3383	gi10441	Homo sapiens	protein	1127	100

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
		382		kinase		
371	3395	gi530823	Homo sapiens	epidermal growth factor receptor kinase substrate	402	47
372	3405	Y29332	Homo sapiens	Human secreted protein clone pe584_2 protein sequence.	1220	94
373	3408	gi3334741	Homo sapiens	shal-type potassium channel	2888	90
374	345	gi4539527	Homo sapiens	NAALADase L protein	600	72
375	346	Y95434	Homo sapiens	Human calcium channel SOC-3/CRAC-2 C-terminal polypeptide.	1802	99
376	3470	gi9798452	Homo sapiens	putative capacitative calcium channel	277	100
377	3482	gi3818572	Homo sapiens	cAMP-specific phosphodiesterase 8B; PDE8B1; 3',5'-cyclic nucleotide phosphodiesterase	2353	96
378	3492	gi1665825	Homo sapiens		3878	99
379	3530	gi5051000	Homo sapiens	KIAA0066	3637	100
380	3533	Y32169	Homo sapiens	Human growth-associated protease inhibitor heavy chain precursor.	2860	99
381	3545	gi6624133	Homo sapiens		449	98
382	3549	gi1469193	Homo sapiens	The KIAA0135 gene is related to	5374	99

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
				pim-1 oncogene.		
383	3595	gi6330190	Homo sapiens	KIAA1169 protein	1893	100
384	3601	gi8089815	Homo sapiens	tumor necrosis factor receptor type 1 associated protein	992	99
385	3612	gi5305448	Mus musculus	SH2-B PH domain containing signaling mediator 1 gamma isoform	1439	92
386	3613	Y32194	Homo sapiens	Human receptor molecule (REC) encoded by Incyte clone 266775.	1438	100
387	3621	gi8978499	Mus musculus	ubiquitinating enzyme E2-230 kDa	393	68
388	3624	R47858	Homo sapiens	Human LDL receptor Domains 1 and 2.	2895	100
389	3625	Y57949	Homo sapiens	Human transmembrane protein HTMPN-73.	1868	100
390	3626	W69342	Homo sapiens	Secreted protein of clone CJ424_9.	442	94
391	3627	gi6537136	Homo sapiens	putative organic anion transporter	982	92
392	3630	Y06886	Homo sapiens	HWHHJ20 polypeptide.	1109	91
393	3642	gi4886467	Homo sapiens	hypothetical protein	570	52
394	3645	gi9588402	Homo sapiens		598	98
395	3647	Y12050	Homo sapiens	Human 5' EST secreted protein	517	98

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Acces-sion No.	Species	Description	Smith - Water man Score	% Identity
396	3653	Y70018	Homo sapiens	Human Protease and associated protein-12 (PPRG-12).	2232	99
397	3676	W67818	Homo sapiens	Human secreted protein encoded by gene 12 clone HMSJJ74.	338	100
398	3677	gi32093	Homo sapiens	HGMP07J	650	52
399	3681	Y48443	Homo sapiens	Human prostate cancer-associated protein 140.	803	93
400	3682	gi46917 26	Homo sapiens	ARF GTPase-activating protein GIT1	2435	91
401	3688	gi66938 24	Homo sapiens	ubiquitin-specific protease	1995	99
402	3689	Y94927	Homo sapiens	Human secreted protein clone ck213_12 protein sequence	530	81
403	3690	gi18716 12	Oryctolagus cuniculus	ryanodine receptor	594	95
404	3706	gi60027 14	Homo sapiens	membrane-type serine protease 1	2630	94
405	3714	gi26957 08	Homo sapiens	SPOP	553	81
406	3720	gi93092 93	Homo sapiens	asc-type amino acid transporter 1	566	95
407	3726	gi10440 381	Homo sapiens	FLJ00026 protein	1023	69
408	373	gi57146 96	Mus musculus	alpha 2 delta calcium channel subunit	243	95
409	3788	gi69112 19	Homo sapiens	type II membrane serine protease	841	100

SEQ ID NO:	SEQ ID NO: in USSN 09/48 8,725	Accession No.	Species	Description	Smith-Water man Score	% Identity
410	3789	Y45023	Homo sapiens	Human sensory transduction G-protein coupled receptor-B3.	1084	95
411	3790	gi15240 88	Homo sapiens	Polio virus receptor protein	1508	99
412	3801	gi67236 75	Homo sapiens	mitotic kinase-like protein-1	2035	99.
413	3803	gi96897 3	Homo sapiens	mitotic kinase-like protein-1	332	86
414	3820	gi17704 78	Homo sapiens	NK receptor	1988	99
415	3831	gi27813 86	Homo sapiens		1493	99
416	3837	gi93678 40	Homo sapiens	neuronal apoptosis inhibitory protein 2	2243	99
417	385	gi15269 78	Homo sapiens	ryanodine receptor 2	149	96
418	3856	gi99565 4	Homo sapiens	interleukin-11 receptor	147	100
419	386	gi49600 38	Mus musculus	T2K protein kinase homolog	669	66
420	3861	Y74129	Homo sapiens	Human prostate tumor EST fragment derived protein #316.	842	98
421	3883	gi66352 05	Homo sapiens	beta-ureidopropiona se	1576	100
422	3898	gi37231	Homo sapiens	DNA topoisomerase II	8436	99
423	3921	gi86488 81	Homo sapiens	putative organic anion transporter	131	100
424	3932	gi85757 75	Homo sapiens	KRAB zinc finger protein	1935	99
425	3934	gi46891 28	Homo sapiens	SIH003	127	92
426	3963	gi32129 96	Homo sapiens		339	64
427	3974	G03790	Homo sapiens	Human	232	63

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
				secreted protein,		
428	3983	gi181971	Homo sapiens	vascular endothelial growth factor	433	85
429	3999	gi1657464	Sus scrofa	calcium/calmodulin-dependent protein kinase II isoform gamma-G	484	75
430	4001	gi6572230	Homo sapiens		329	100
431	4009	gi2143260	Homo sapiens	phosphoinositide 3-kinase	521	99
432	401	gi6572379	Homo sapiens		1372	56
433	4020	gi2815624	Homo sapiens	tumor necrosis factor superfamily member LIGHT	1252	100
434	4024	Y21166	Homo sapiens	Human bcl2 proto-oncogene mutant protein fragment 14.	84	40
435	4040	Y57285	Homo sapiens	Human GPCR protein (HGPRP) sequence (clone ID 2214673).	1726	99
436	4057	W74873	Homo sapiens	Human secreted protein encoded by gene 145 clone HFXHL79.	531	100
437	4066	G03714	Homo sapiens	Human secreted protein,	92	70
438	4067	gi8331760	Homo sapiens	LU1 protein	1077	92
439	4078	Y57900	Homo sapiens	Human transmembrane protein HTMPN-24.	996	100
440	4120	gi18715	Homo sapiens	mitogen-	927	100

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
		39		activated protein kinase phosphatase 4		
441	4123	gi5360125	Homo sapiens	NY-REN-58 antigen	140	100
442	4130	gi6289072	Homo sapiens	JM24 protein	604	100
443	4133	gi8575527	Homo sapiens	toll-like receptor 8	755	100
444	4166	gi6118555	Homo sapiens	DEAD-box protein abstrakt	2512	100
445	4167	gi3800830	Rattus norvegicus	putative four repeat ion channel	615	93
446	4172	gi7209676	Homo sapiens	potassium channel Kv8.1	369	100
447	4185	gi5305405	Homo sapiens	Na+/H+ exchanger isoform 2	1769	100
448	4197	gi2811122	Xenopus laevis	NaDC-2	524	69
449	4203	Q89840_aa1	Homo sapiens	Human death associated protein DAP-3.	198	97
450	4262	gi5901478	Marmota marmota	olfactory receptor	209	92
451	4276	gi32456	Homo sapiens	protein-tyrosine phosphatase	3270	99
452	4283	R41231	Homo sapiens	GAT-2 transporter gene.	477	100
453	4331	gi3171912	Homo sapiens	RAMP2	443	98
454	4340	gi8118223	Homo sapiens	unknown	1330	100
455	4351	gi1754515	Rattus norvegicus	aminopeptidase-B	2050	92
456	4354	Y57906	Homo sapiens	Human transmembrane protein HTMPN-30.	1402	100
457	4385	gi5596433	Homo sapiens	candidate tumor suppressor protein NOC2	509	97

SEQ ID NO:	SEQ ID NO: in USSN 09/48 8,725	Acces-sion No.	Species	Description	Smith - - Water man Score	% Identity
458	4388	W78140	Homo sapiens	Human secreted protein encoded by gene 15 clone HSDES04.	100	94
459	4405	Y48226	Homo sapiens	Human prostate cancer-associated protein 12.	1246	99
460	441	gi29153 6	Bovine herpesvirus 1	BICP4	106	35
461	4417	gi65625 33	Homo sapiens	sialin	939	100
462	4419	gi18415 55	Homo sapiens	NG5	146	33
463	4443	gi49613 9	Mus musculus	AMPA selective glutamate receptor	262	94
464	4470	gi72483 81	Homo sapiens	adaptor protein p130Cas	2592	100
465	4482	gi73299 79	Homo sapiens	apoptosis regulator	2071	100
466	4487	gi67066 59	Homo sapiens		405	100
467	4491	gi98373 41	Homo sapiens	CamKI-like protein kinase	1044	100
468	4492	Y42751	Homo sapiens	Human calcium binding protein 2 (CaBP-2).	586	99
469	4497	gi61797 40	Homo sapiens	paraneoplastic cancer-testis-brain antigen	352	37
470	4502	gi63297 42	Homo sapiens	KIAA1124 protein	327	100
471	4519	Y99426	Homo sapiens	Human PRO1604 (UNQ785) amino acid sequence	1563	100
472	4526	Y08008	Homo sapiens	Human HLIG-1 protein.	4023	99
473	4547	gi45895 62	Homo sapiens	KIAA0959 protein	4165	99
474	4554	gi13810 29	Mus musculus		1164	77

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
475	4555	gi2792366	Homo sapiens	unknown protein IT12	4461	99
476	457	Y70551	Homo sapiens	Human latent transforming growth factor-beta binding protein 3 (I).	1825	100
477	4571	gi5360115	Homo sapiens	NY-REN-45 antigen	869	100
478	4613	Y05868	Homo sapiens	Human Toll protein PRO358.	2413	100
479	4614	Y27129	Homo sapiens	Human bone marrow-derived polypeptide (clone OAF038-Leu).	1815	100
480	4622	G03789	Homo sapiens	Human secreted protein,	173	53
481	4667	gi7673638	Danio rerio	Dedd1	446	48
482	4670	gi402649	Homo sapiens	c-rel	2309	100
483	4683	Y68773	Homo sapiens	Amino acid sequence of a human phosphorylation effector PHSP-5.	2234	99
484	4698	Y73470	Homo sapiens	Human secreted protein clone yd141_1 protein sequence	746	100
485	4724	gi6456846	Homo sapiens	hypothetical protein	1101	99
486	4734	gi3334982	Homo sapiens	R27216_1	1151	80
487	4814	gi6274473	Homo sapiens	pregnancy-induced growth inhibitor	1348	100
488	4819	Y07825	Homo sapiens	Human secreted protein fragment #4 encoded from	117	67

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Acces-sion No.	Species	Description	Smith-Waterman Score	% Identity
				gene 28.		
489	4821	Y81498	Homo sapiens	Human foetal bone-derived growth factor-like protein.	1200	100
490	4851	gi5689491	Homo sapiens	KIAA1077 protein	4364	99
491	4872	gi5911953	Homo sapiens	hypothetical protein	3723	99
492	4902	B08917	Homo sapiens	Human secreted protein sequence encoded by gene 27	717	100
493	5006	gi4357774	Homo sapiens	receptor tyrosine kinase isoform FLT4 long, FLT41 {C-terminal}	385	100
494	5007	Y93951	Homo sapiens	Amino acid sequence of a Brainiac-5 polypeptide.	804	100
495	5027	gi3548791	Homo sapiens	R33590_1	1606	100
496	5029	gi5689527	Homo sapiens	KIAA1095 protein	5722	99
497	5033	Y14482	Homo sapiens	Fragment of human secreted protein encoded by gene 17.	166	66
498	5040	Y95019	Homo sapiens	Human secreted protein vql_1,	258	92
499	5061	gi1304434	Pseudorabies virus	EP0	85	38
500	5081	gi4038081	Homo sapiens	vascular endothelial cell growth inhibitor	134	100
501	5129	gi3169158	Homo sapiens	BC269730_2	2340	99
502	5139	gi4062856	Homo sapiens	HEXIM1 protein	293	47
503	5174	gi93685	Homo sapiens	140up gene	576	90

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Acces-sion No.	Species	Description	Smith-Water man Score	% Identity
		40		product		
504	524	G00329	Homo sapiens	Human secreted protein,	565	100
505	5291	Y92515	Homo sapiens	Human OXRE-12.	1271	98
506	5335	gi7296158	Drosophila melanogaster	CG3862 gene product	753	46
507	5346	Y94987	Homo sapiens	Human secreted protein vj1_1,	849	100
508	5379	gi7144506	Homo sapiens	cytokine-inducible SH2-containing protein	1353	99
509	5441	gi8096551	Homo sapiens	similar to mouse Ehm2	1516	100
510	549	Y22113	Homo sapiens	Human ZSMF-3 protein sequence.	294	62
511	5542	Y76267	Homo sapiens	Fragment of human secreted protein encoded by gene 11.	1066	100
512	5560	G03790	Homo sapiens	Human secreted protein,	103	36
513	5696	gi7920398	Homo sapiens	PTOV1	1904	91
514	5704	B08930	Homo sapiens	Human secreted protein sequence encoded by gene 2	987	100
515	5758	W18878	Homo sapiens	Human protein kinase C inhibitor, IPKC-1.	368	100
516	5760	gi6562176	Homo sapiens	hypothetical protein	425	100
517	5763	Y41706	Homo sapiens	Human PRO381 protein sequence.	441	100
518	5787	Y57907	Homo sapiens	Human transmembrane protein HTMPN-31.	952	100

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
519	5823	gi9800242	rat cytomegalovirus Maastricht	pr5	153	36
520	5886	gi1781037	Mus musculus	neuronal tyrosine threonine phosphatase 1	1135	52
521	5924	W69221	Homo sapiens	Human parotid secretory protein.	710	96
522	5960	Y91529	Homo sapiens	Human secreted protein sequence encoded by gene 79	1300	99
523	5962	W69784	Homo sapiens	Protein Kinase C Inhibitor-like Protein (IPKC-2).	395	100
524	5969	Y79141	Homo sapiens	Human haemopoietic stem cell regulatory protein SCM113.	1205	79
525	5976	gi780310	Homo sapiens	natural killer associated transcript 4	1808	91
526	6002	gi2104553	Homo sapiens		4367	67
527	6008	Y66765	Homo sapiens	Membrane-bound protein PRO1384.	822	100
528	6020	gi1911548	Homo sapiens	cytochrome c-like polypeptide	322	50
529	6036	W71362	Homo sapiens	Human cytokine/steroid receptor protein.	353	51
530	6070	Y42750	Homo sapiens	Human calcium binding protein 1 (CaBP-1).	626	100
531	6075	gi10732648	Homo sapiens	angiopoietin-like protein	2164	100

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Acces-sion No.	Species	Description	Smith-Water man Score	% Identity
				PP1158		
532	6106	gi2217970	Homo sapiens	p40	1349	96
533	6420	W82000	Homo sapiens	Human adult brain secreted protein dm26_2.	929	100
534	6434	gi10732648	Homo sapiens	angiopoietin-like protein PP1158	2164	100
535	6439	gi189701	Homo sapiens	endothelial cell growth factor	376	100
536	6463	Y41720	Homo sapiens	Human PRO792 protein sequence.	360	82
537	6466	gi4884084	Homo sapiens	hypothetical protein	538	100
538	6508	gi5442030	Homo sapiens	aminopeptidase	2317	96
539	6570	gi5921491	Homo sapiens		1591	99
540	6719	gi31847	Homo sapiens	glypican	1625	87
541	6772	Y65432	Homo sapiens	Human 5' EST related polypeptide	180	53
542	6789	gi5372922	Homo sapiens	ICH-1L	1556	100
543	6805	gi4454702	Homo sapiens	HSPC007	634	84
544	6833	gi1890660	Homo sapiens	protein tyrosine phosphatase receptor omicron	5726	87
545	6834	gi5921491	Homo sapiens		1746	88
546	6851	gi2407641	Homo sapiens	neuropilin	3968	98
547	6868	gi6714641	Drosophila melanogaster	MAP kinase phosphatase	218	49
548	6876	Y13138	Homo sapiens	Human secreted protein encoded by 5' EST	414	76
549	688	Y73463	Homo sapiens	Human secreted protein clone	701	98

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SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
				yk199_1 protein sequence		
550	6897	gi5815180	Homo sapiens	unknown	509	97
551	690	gi10645186	Homo sapiens	meningioma-expressed antigen 5s splice variant	522	100
552	6909	W78149	Homo sapiens	Human secreted protein encoded by gene 24 clone HSVBF78.	485	100
553	6924	Y35923	Homo sapiens	Extended human secreted protein sequence,	514	99
554	6937	G03798	Homo sapiens	Human secreted protein,	281	70
555	6951	gi511857	Homo sapiens	prostate-specific antigen	364	95
556	7008	G03200	Homo sapiens	Human secreted protein,	548	98
557	7009	Y22213	Homo sapiens	Human V201 protein sequence.	856	100
558	7057	gi6003654	Homo sapiens	brain specific membrane-anchored protein BSMAP	1814	100
559	7098	W27291	Homo sapiens	Human H1075-1 secreted protein 5' end.	712	100
560	7114	gi3212110	Homo sapiens	prefoldin subunit 1	534	98
561	712	gi4558641	Homo sapiens	P85B_HUMAN; PTDINS-3-KINASE P85-BETA	470	74
562	7215	gi4868366	Homo sapiens	delta-6 fatty acid desaturase	2437	100

SEQ ID NO:	SEQ ID NO: in USSN 09/48 8,725	Acces-sion No.	Species	Description	Smith-Water man Score	% Identity
563	7244	Y12445	Homo sapiens	Human 5' EST secreted protein	428	100
564	7248	gi31137 6	Homo sapiens	Humig	633	100
565	7252	gi56895 31	Homo sapiens	KIAA1097 protein	5240	100
566	7292	gi51069 98	Homo sapiens	HSPC040 protein	580	100
567	7306	Y32201	Homo sapiens	Human receptor molecule (REC) encoded by Incyte clone 2057886.	1974	95
568	7338	Y73880	Homo sapiens	Human prostate tumor EST fragment derived protein #67.	1566	100
569	736	gi10178 317	Homo sapiens		1468	100
570	737	G00851	Homo sapiens	Human secreted protein,	522	98
571	740	W85610	Homo sapiens	Secreted protein clone eh80_1.	1115	87
572	7400	Y93948	Homo sapiens	Amino acid sequence of a lectin ss3939 polypeptide.	1982	98
573	7415	gi30436 70	Homo sapiens	KIAA0573 protein	2392	100
574	7429	Y40864	Homo sapiens	A human glutathione-S-transferase (hGST) protein.	1183	99
575	7458	Y53643	Homo sapiens	A bone marrow secreted protein designated BMS6.	554	99
576	7516	gi44683 11	Homo sapiens		1146	99
577	7526	gi41389 22	Homo sapiens	promyelocytic leukemia zinc finger	3571	99

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Acces-sion No.	Species	Description	Smith-Waterman Score	% Identity
				protein; kruppel-like zinc finger protein; PLZF		
578	7571	G02915	Homo sapiens	Human secreted protein,	209	100
579	7614	W74726	Homo sapiens	Human secreted protein fg949_3.	1879	100
580	7663	gi5912548	Homo sapiens		1634	100
581	7686	gi4929711	Homo sapiens	CGI-121 protein	870	100
582	7714	gi388765	Homo sapiens	phospholipase D	4428	99
583	7724	G03933	Homo sapiens	Human secreted protein,	570	100
584	7834	gi8919166	Homo sapiens	mesenchymal stem cell protein DSC92	1133	100
585	7855	Y48505	Homo sapiens	Human breast tumour-associated protein 50.	684	100
586	7870	Y13372	Homo sapiens	Amino acid sequence of protein PRO223.	2559	100
587	7871	Y91689	Homo sapiens	Human secreted protein sequence encoded by gene 93	768	100
588	7892	gi34659	Homo sapiens	macrophage inflammatory protein-2alpha precursor	532	100
589	7927	gi32575	Homo sapiens		183	91
590	7944	gi1657458	Sus scrofa	calcium/calmodulin-dependent protein kinase II isoform gamma-B	2744	100
591	7947	G01131	Homo sapiens	Human	574	96

SEQ ID NO:	SEQ ID NO: in USSN 09/48 8,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
				secreted protein,		
592	800	gi3021428	Homo sapiens	neutral sphingomyelinase	167	68
593	8055	gi4929637	Homo sapiens	CGI-84 protein	1038	100
594	8082	gi4679014	Homo sapiens	HSPC014	715	100
595	8127	gi9955693	Homo sapiens	twisted gastrulation protein	905	95
596	8174	gi5532294	Homo sapiens	MUM2	767	100
597	8178	gi4530587	Homo sapiens	TADA1 protein	1132	100
598	8215	R66278	Homo sapiens	Therapeutic polypeptide from glioblastoma cell line.	830	100
599	8263	Y48371	Homo sapiens	Human prostate cancer-associated protein 68.	713	98
600	827	gi3172337	Cavia porcellus	phospholipase B	955	73
601	828	Y29517	Homo sapiens	Human lung tumour protein SAL-82 predicted amino acid sequence.	833	94
602	8294	gi4929767	Homo sapiens	CGI-149 protein	1085	100
603	8313	gi5771420	Homo sapiens	group IID secretory phospholipase A2	852	100
604	832	Y86260	Homo sapiens	Human secreted protein HELHN47,	319	78
605	8357	gi4191358	Mus musculus	claudin-7	164	47
606	8373	gi1945271	Homo sapiens	protein phosphatase 6	1666	100
607	8379	gi58529	Homo sapiens		1226	100

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
		81		cardiotrophin-like cytokine CLC		
608	8380	gi3402216	Homo sapiens	protein	974	100
609	8386	gi386988	Homo sapiens	oncostatin M	1297	99
610	8418	Y70210	Homo sapiens	Human TANGO 130 protein.	722	98
611	8442	G01895	Homo sapiens	Human secreted protein,	490	95
612	8457	G04048	Homo sapiens	Human secreted protein,	450	98
613	8458	W97119	Homo sapiens	S-adenosyl-L-methyltransferase (SAM-MT) protein.	1484	100
614	8469	gi7159799	Homo sapiens		255	100
615	8480	gi4589530	Homo sapiens	KIAA0943 protein	1998	100
616	8521	gi5726235	multiple sclerosis associated retrovirus element	unknown protein U5/2	250	82
617	857	gi9663958	Homo sapiens	cysteinyl leukotriene CysLT2 receptor	612	99
618	8574	gi6841260	Homo sapiens	HSPC305	1049	100
619	8606	gi3367707	Homo sapiens	scrapie responsive protein 1	544	100
620	8632	G01158	Homo sapiens	Human secreted protein,	502	100
621	8646	gi3882249	Homo sapiens	KIAA0764 protein	2175	100
622	8666	Y66196	Homo sapiens	Human bladder tumour EST encoded protein 54.	1080	95
623	8675	gi9963908	Homo sapiens	NPD009	432	96
624	8683	G04018	Homo sapiens	Human	469	98

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
				secreted protein,		
625	8708	gi1633564	Homo sapiens	C8	364	98
626	8720	gi8248465	Homo sapiens	hepatocellular carcinoma-associated antigen 56A	191	69
627	8756	Y94984	Homo sapiens	Human secreted protein ve11_1,	369	97
628	8765	Y00346	Homo sapiens	Fragment of human secreted protein encoded by gene 2.	1068	97
629	8783	Y27918	Homo sapiens	Human secreted protein encoded by gene No. 123.	1051	95
630	8804	Y25426	Homo sapiens	Human SIGIRR protein.	887	100
631	8838	Y99409	Homo sapiens	Human PRO1343 (UNQ698) amino acid sequence	1279	100
632	8851	W74785	Homo sapiens	Human secreted protein encoded by gene 56 clone HSAXS65.	454	100
633	8853	W75116	Homo sapiens	Human secreted protein encoded by gene 60 clone HILCJ01.	245	95
634	8857	gi2565196	Homo sapiens	non-functional folate binding protein	479	74
635	8859	Y02690	Homo sapiens	Human secreted protein encoded by gene 41c lone	600	100

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Acces-sion No.	Species	Description	Smith - Water man Score	% Identity
				HSZAF47.		
636	8901	Y86491	Homo sapiens	Human gene 59-encoded protein fragment,	548	99
637	8907	W88745	Homo sapiens	Secreted protein encoded by gene 30 clone HTSEV09.	2004	99
638	8934	W75088.	Homo sapiens	Human secreted protein encoded by gene 32 clone HAGBB70.	421	98
639	8960	Y02693	Homo sapiens	Human secreted protein encoded by gene 44 clone HTDAD22.	267	72
640	8979	Y76143	Homo sapiens	Human secreted protein encoded by gene 20.	1374	98
641	8980	Y11433	Homo sapiens	Human 5' EST secreted protein	466	100
642	8986	G02626	Homo sapiens	Human secreted protein,	306	100
643	8987	G02093	Homo sapiens	Human secreted protein,	486	97
644	8995	Y12908	Homo sapiens	Human 5' EST secreted protein	181	100
645	9035	Y71108	Homo sapiens	Human Hydrolase protein-6 (HYDRL-6).	800	100
646	9062	gi88860 05	Homo sapiens	lysophosphatid ic acid acyltransferas e-delta	523	100
647	9074	Y25761	Homo sapiens	Human	1366	99

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
				secreted protein encoded from gene 51.		
648	9075	Y73336	Homo sapiens	HTRM clone 1852290 protein sequence.	1591	100
649	9098	Y57878	Homo sapiens	Human transmembrane protein HTMPN-2.	516	100
650	9109	gi23903	Homo sapiens	63kDa protein kinase	1141	97
651	911	gi32456	Homo sapiens	protein-tyrosine phosphatase	2591	100
652	912	gi1136743	Homo sapiens	human P5	212	46
653	9163	Y34129	Homo sapiens	Human potassium channel K+Hnov28.	377	71
654	9164	Y41324	Homo sapiens	Human secreted protein encoded by gene 17 clone HNFIY77.	1083	99
655	9173	gi6851256	Mus musculus	protein tyrosine phosphatase-like protein PTPLB	631	93
656	9187	Y66721	Homo sapiens	Membrane-bound protein PRO511.	1173	95
657	9190	W40378	Homo sapiens	Human breast cancer protein CH14-2a16-1 from 2.0 kB DNA fragment #2.	792	81
658	9194	Y02781	Homo sapiens	Human secreted protein.	462	70
659	9210	G02994	Homo sapiens	Human secreted protein,	166	80

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
660	9222	G02520	Homo sapiens	Human secreted protein,	186	43
661	9230	gi6706554	Homo sapiens	inositol 1,4,5-trisphosphate 3-kinase B	1315	95
662	9258	gi522145	Homo sapiens	B-cell growth factor	120	56
663	9260	G04072	Homo sapiens	Human secreted protein,	138	51
664	9271	gi6690095	Homo sapiens	tetraspanin protein	317	67
665	9272	gi163042	Bos taurus	factor activating exoenzyme S	444	72
666	9275	gi401774	Homo sapiens	ribosomal protein S6 kinase 3	424	81
667	930	G02355	Homo sapiens	Human secreted protein,	167	41
668	9304	gi8979743	Canis familiaris	Band4.1-like5 protein	1493	93
669	9346	gi2738989	Mus musculus	high mobility group protein homolog HMG4	384	89
670	9347	gi36613	Homo sapiens	serine/threonine protein kinase	199	91
671	935	gi5541870	Homo sapiens	QA79 membrane protein, allelic variant airm-1b	334	57
672	9350	gi3327124	Homo sapiens	KIAA0655 protein	757	87
673	9351	W57260	Homo sapiens	Human semaphorin Y.	573	95
674	9356	gi59977	Human endogenous retrovirus	tripartite fusion transcript PLA2L	127	59
675	9363	Y17834	Homo sapiens	Human PRO361 protein sequence.	968	92
676	9366	gi72431	Homo sapiens	KIAA1374	649	96

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
		29		protein		
677	9369	G03793	Homo sapiens	Human secreted protein,	222	69
678	9378	gi4468311	Homo sapiens		163	39
679	9393	gi2738989	Mus musculus	high mobility group protein homolog HMG4	384	89
680	9444	G01399	Homo sapiens	Human secreted protein,	157	93
681	9467	gi4454702	Homo sapiens	HSPC007	230	71
682	9486	gi10047243	Homo sapiens	KIAA1584 protein	605	93
683	949	Y30895	Homo sapiens	Human secreted protein fragment encoded from gene 25.	704	99
684	9499	W36002	Homo sapiens	Human Fchd531 gene product.	2173	96
685	9510	gi1665799	Homo sapiens		867	83
686	9523	Y53022	Homo sapiens	Human secreted protein clone qf116_2 protein sequence	1252	89
687	9534	Y66670	Homo sapiens	Membrane-bound protein PRO1180.	998	100
688	9539	Y76144	Homo sapiens	Human secreted protein encoded by gene 21.	633	100
689	954	G02490	Homo sapiens	Human secreted protein,	160	78
690	9546	gi181121	Homo sapiens	chorionic somatomammotropin	616	96
691	955	gi7243103	Homo sapiens	KIAA1361 protein	2042	100
692	9551	gi17723	Homo sapiens	ras-related	341	57

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Acces- sion No.	Species	Description	Smith - Water man Score	% Identity
		45		GTP-binding protein		
693	9558	W88403	Homo sapiens	Human adult testis secreted protein ga63_6.	2252	100
694	9561	gi66900 17	Herpesvirus papio	NTR	100	30
695	957	Y86260	Homo sapiens	Human secreted protein HELHN47,	319	78
696	9572	gi97294 0	Mus musculus	Elf-1	806	92
697	9576	gi32490 05	Homo sapiens	geminin	448	98
698	9586	gi28872 88	Homo sapiens	mRNA cleavage factor I 25 kDa subunit	208	100
699	9587	G00995	Homo sapiens	Human secreted protein,	726	99
700	9592	gi49527 3	Rattus norvegicus	ribosomal protein S15a	202	78
701	9595	gi77999 12	Homo sapiens	UBASH3A protein	453	47
702	9610	Y07875	Homo sapiens	Human secreted protein fragment encoded from gene 24.	574	100
703	9634	Y73325	Homo sapiens	HTRM clone 001106 protein sequence.	820	99
704	9639	G00805	Homo sapiens	Human secreted protein,	155	67
705	9647	G03786	Homo sapiens	Human secreted protein,	196	73
706	9653	gi38823 41	Homo sapiens	KIAA0810 protein	523	100
707	9654	G01924	Homo sapiens	Human secreted protein,	469	100
708	9678	Y99376	Homo sapiens	Human PRO1244 (UNQ628) amino	474	100

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Acces- sion No.	Species	Description	Smith - Water man Score	% Identity
				acid sequence		
709	9709	Y11825	Homo sapiens	Human 5' EST secreted protein	657	100
710	9722	gi7677422	Mus musculus	GTPase Rab37	189	75
711	9731	Y12424	Homo sapiens	Human 5' EST secreted protein	207	100
712	9742	Y57954	Homo sapiens	Human transmembrane protein HTMPN-78.	484	100
713	9749	gi3687829	Homo sapiens	hT41	386	65
714	9755	gi2055295	Homo sapiens	Similar to a C.elegans protein in cosmid C14H10	2583	100
715	9762	G03436	Homo sapiens	Human secreted protein,	176	61
716	9763	gi6180011	Homo sapiens	anaphase-promoting complex subunit 4	1016	100
717	9784	G03570	Homo sapiens	Human secreted protein,	401	96
718	9794	G00803	Homo sapiens	Human secreted protein,	333	69
719	9795	gi2516242	Mus musculus	Rab33B	669	94
720	9798	gi558599	Homo sapiens	ZID, zinc finger protein with interaction domain	605	96
721	9805	Y25881	Homo sapiens	Human secreted protein fragment encoded from gene 61.	566	96
722	9816	gi532056	Homo sapiens	protein-tyrosine-phosphatase	384	100
723	9830	G00857	Homo sapiens	Human	539	96

SEQ ID NO:	SEQ ID NO: in USSN 09/48 8,725	Acces-sion No.	Species	Description	Smith - Water man Score	% Identity
				secreted protein,		
724	9836	G00914	Homo sapiens	Human secreted protein,	527	100
725	9837	gi26620 99	Homo sapiens	KIAA0409	230	67
726	984	Y29517	Homo sapiens	Human lung tumour protein SAL-82 predicted amino acid sequence.	833	94
727	9849	gi72293 05	Homo sapiens	ZNF264, partial cds	140	90
728	9851	gi52625 60	Homo sapiens	hypothetical protein	369	64
729	9859	gi38819 76	Homo sapiens	hypothetical protein	167	93
730	9863	gi72957 07	Drosophila melanogaster	CG15433 gene product	837	78
731	9888	gi33196 77	Homo sapiens		209	72
732	989	gi45571 43	Rattus norvegicus	zinc finger protein RIN ZF	604	92
733	9919	G01843	Homo sapiens	Human secreted protein,	586	100
734	9922	W67869	Homo sapiens	Human secreted protein encoded by gene 63 clone HHGDB72.	551	93
735	9947	W78239	Homo sapiens	Fragment of human secreted protein encoded by gene 3.	251	78
736	9956	Y36203	Homo sapiens	Human secreted protein #75.	273	77
737	9961	Y99357	Homo sapiens	Human PRO1190 (UNQ604) amino acid sequence	650	99
738	9972	Y12149	Homo sapiens	Human 5' EST secreted protein	284	100
739	9977	gi10039	Homo sapiens	osteoblast	822	98

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
		439		differentiation promoting factor		

Table 3 - Amino Acids

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
1	740	2	557	FVGRLLRLGEALRLRPDPSGGCRLQPALVGETEMSEKENNFPP LPKFIPVKPCFYQNFSDEIPVEHQVLVKRIYRLWMFYCATLGV NLIACLAWWIGGGSGTNFGLAFVWLLLFTPCGYVCWFRPVYKA FRADSSFNFMAFFFIFRSPVCPDRHPGDWLLRLGRVRLAVGNW ILPVQPGRCRGHA
2	741	305	838	FLGAGADIFCAYLRMSSKQATSPFACAADGEDAMTQDLTSREK EEGSDQHVASHLPLHPIMHNKPHSEELPTLVSTIQQDADWDSV LSSQQRMESENNKLCSLYSFRNTSTSPHKPDEGSRDREIMTSV TFGTPERRKGSLADVVDTLKQKKLEEMTRTEQEDSSCMEKLLS KDWKE
3	742	12	1315	EGYLTGRPTRPVAVRGKSTADLRMMGRSPGFAMQHIVGVPHVL VRRGLLGRDLFMTRTLCSPGPSQPGEKRPEEVALGLHHRLPAL GRALGHSIQQRATSTAKTWWDRYEEFVGLNEVREAQGKVTEAE KVFMVARGLVREAREDLEVHQAKLKEVRDRLDRVSREDSQYLE LATLEHRMLQEEKRLRTAYLRAEDSEREKFSLFSAAVRESHEK ERTRAERTKNWSLIGSVLGALIGVAGSTYVNRVRLQELKALLL EAQKGPVSLQEAIREQASSYSRQQRDLHNLMVDLRGLVHAAGP GQDSGSQAGSPPTRDRDVDVLSAALKEQLSHSRQVHSCLEGLR EQLDGLEKTCSQMAGVVQLVKSAAHPGLVEPADGAMPSFLLEQ GSMILALSDTEQRLEAQVNRNTIYSTLVTCVTFVATLPVLYML FKAS
4	743	112	745	NLPPLTPQPGPRLAGSGPSHWFSPLSLPVASKAPGTMAQALGE DLVQPPELQDDSSSLGSDSELSGPGPYRQADRYGFIGGSSAEP GPGHPPADLIRQREMKWVEMTSHWEKTMSRRYKKVKMQCRKGI PSALRARCWPLLCGAHVCQKNSPGTYQELAEAPGDPQWMETIG RDLHRQFPLHEMFVSPQGHGQQGLLQVLKAYTLYRPEQG
5	744	99	265	LRGMAAAAAGPAASQRFFQSFSDALIDQDPQAALEVGEPFLLP PLPADPPPSSTA

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
6	745	210	758	WACFRSAHCSRHLRNRIFMYLYWDKTRSPVCKGPALREERPQP RLKLEDYKDRLKSGEHLNPDQLEAVEKYEEVLHNLEFAKELQK TFSGLSLDLLKAQKKAQRREHMLKLEAEKKKLRTILQVQYVLQ NLTQEHVQKDFKGGLNGAVYLPSKELDYLIKFSKLTCPERNES LRQTLEGSTV
7	746	48	450	XAGVQMKLEFLQRKFWAATRQCSTVDGPCTQSCEDSDLDCFVI DNNGFILISKRSRETGRFLGEVDGAVLTQLLSMGVFSQVTMYD YQAMCKPSSHHHSAAQPLVSPISAFLTATRWLLQELVLFLLEW SVWGSX*
8	747	1	469	CRGRLAQLEEAAVAATMSAGDAVCTGWLVKSPPERKLQRYAWR KRWFVLRRGRMSGNPDVLEYYRNKHSSKPIRVIDLSECAVWKH VGPSFVRKEFQNNFVFIVKTTSRTFYLVAKTEQEMQVWVHSIS QVCNLGHLEDGAADSMESLSYTRSYLQ
9	748	242	409	IPAVPLTSCVTVGSYSLSVRDYDPRQGDTVKHYKIRTL\DKRG FYISP\RSTFSTLQ
10	749	1	1146	KDSVLNIARGKKYGEKTKRVSSRKKPALKC/TSQKQPALKAIC DKEDSVPNTATEKKDEQISGTVSSQKQPALKATSDKKDSVSNI PTEIKDGQQSGTVSSQKQPAWKATSVKKDSVSNIATEIKDGQI \RGTVSSQRQPALKA\TGDEKDSVSNIAREIKDGEKSGTVSPQ KQSAQKVIFKKKVSLLNIATRITGGWKSGTEYPENLPTLKATI ENKNSVLNTATKMKDVQTSTPEQDLEMASEGEQKRLEEYENNQ PQVKNQIHSRDDLDDIIQSSQTVSEDGDSLCCNCKNVILLIDQ HEMKCKDCVHLLKIKKTFCLCKRLTELKDNHCEQLRVKIRKLK NKASVLQKRLSEKEEIKSQLKHETLELEKELCSLRFAIQQ
11	750	3	892	SPLRYRAGQSGSTISSSSCAMWRCGGRQGLCVLRRLSGGHAHH RAWRWNSNRACERALQYKLGDKIHGFTVNQVTSVPELFLTAVK LTHDDTGARYLHLAREDTNNLFSVQFRTTPMDSTGVPHILEHT VLCGSQKYPCRDPFFKMLNRSLSTFMNAFTASDYTLYPFSTQN PKDFQNLLSVYLDATFFPCLRELDFWQEGWRLEHENPSDPQTP LVFKGVVFNEMKGAFTDNERIFSQHLQNRLLPDHTYSVVSGGD PLCIPELTWEQLKQFHATHYHPSNARFFTYGNFPLDQH
12	751	367	856	RGAKAKSAVLPPGPPCSSILILSPPAPLTPRSPGTEATRPTAM SKSLKKKSHWTSKVHESVIGRNPEGQLGFELKGGAENGQFPYL GEVKPGKVAYESGSKLVSEELLLEVNETPVAGLTIRDVLAVIK HCKDPLRLKCVKQGESSGLLSVLPGGGTARGAGQ
13	752	144	442	SHRPQPDAWRQGNAFQCVQKEKMQVSSAEVRIGPMRLTQDPIQ VLLIFAKEDSQSDGFWWACDRAGYRCNIARTPESALECFLDKH HEIIVIDHRQTQN
14	753	1	581	FRLAGCGHLLVSLLGLLLLLLARSGTRALVCLPCDESKCEEPRN CPGSIVQGVCGCCYTCASQRNESCGGTFGIYGTCDRGLRCVIR PPLNGDSLTEYEAGVCEDENWTDDQLLGFKPCNENLIAGCNII NGKCECNTIRTCSNPFEFPSQDMCLSALKRIEEEKPDCSKARC EVQFSPRCPEDSVLIEGYAPP

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15	754	1	219	FRMAANVGSMFQYWKRFDLQQLQRELDATATVLANRQDESEQS RKRLIEQSREFKKNTPEVRRVTIVFALKGS
16	755	313	562	ETLSCRIMDHPSREKDERQRTTKPMAQRSAHCSRPSGSSSSSG VLMVGPNFRVGKKIGCGNFGELRLGEGLPQVYYFGPCGKY
17	756	273	574	GCCKD*HSGVIGRSWAMLFASGGFQVKLYDIEQQQIRNALENI RWASRRSPEGMEVGLFLSVGLVCHILKAMRICDVTFSSDGYCS ASELVKARPTVAGM
18	757	3	390	NSRVDDFVSARPKPRPLPRARGMVVVTGREPDSRRQDGAMSSS DAEDDFLEPATPTATQAGHAL/PPAAT/GSFLRLFPLTSEGLT SLHACPHCGATKTPCWQPCSVGGTTSPRTPRAGTSSTEMAHTL EMC
19	758	98	461	RALWVGGCSGEACGIGMSGLLTDPEQRAQEPRYPGFVLGLDVG SSVIRCHVYDRAARVCGSSVQKVENLYPQIGWVEIDPDVLWIQ FVAVIKEAVKAAGIQMNQIVGLGISTQRATFITWN
20	759	100	731	GLAAEQSMQFVKLWCGCSGEFPTRLRRRTPLTEAMEGGPAVCC QDPRAELVERVAAIDVTHLEEADGGPEPTRNGVDPPPRARAAS VIPGSTSRLLPARPSLSARKLSLQERPAGSYLEAQAGPYATGP ASHISPRAWRRPTIESHHVAISDAEDCVQLNQYKLQSEIGKGA YGVVRLAYNESEDRHYAMKVLSKKKLLKQYGFPRRPPP
21	760	2	520	FVYGKPVTLWPTISSVVPSTFLGLGNYEVEVEAEPDVRGPEIV TMGENDPPAVEAPFSFRSLFGLDDLKISPVAPDADAVAAQILS LLPLKFFPIIVIGIIALILALAIGLGIHFDCSGKYRCRSSFKC IELIARCDGVSDCKDGEDEYRCVRVGGQNAALQVFTAASRKTM
22	761	158	470	SLAMPFGCVTLGDKKNYNQPSEVTDRYDLGQVIKTEEFCEIFR AKDKTTGKLHTCKKFQKRDGRKVRKAAKNEIGILKMVKHPNIL QLVDVFVTRKEYFIFLEL
23	762	1	749	QRRRFRAGLWGGHGLTDGLRRNGGCGCSARVPRVGERLRGHRC PDPLCLLLDMLFLSFHAGSWESWCCCCLIPADRPWDRGQHWQL EMADTRSVHETRFEAAVKVIQSLPKNGSFQPTNEMMLKFYSFY KQATEGPCKLSRPGFWDPIGRYKWDAWSSLGDMTKEEAMIAYV EEMKKIIETMPMTEKVEELLRVIGPFYEIVEDKKSGRSSDITS DLGNVLTSTPNAKTVNGKAESSDSGAESEEEAC
24	763	3	558	SCFKGRTGGRSGSSGDSSRWARCGRHFSASTEEPPLSQPCSAL PRSGRRGCAVPSSVTKMLSFFRRTLGRRSMRKHAEKERLREAQ RAATHIPAAGDSKSIITCRVSLLDGTDVSVDLPKKAKGQELFD QIMYHLDLIESDYFGLRFMDSAQVAHWLDGTKSIKKQVKIGSP YCLHLRVKFYSS
25	764	9	424	ESRERSGNRRGAEDRGTCGLQSPSAMLGAKPHWLPGPLHSPGL PLVLVLLALGAGWAQEGSEPVLLEGECLVVCEPGRAAAGGPGG AALGEAPPGRVAFAAVRSHHHEPAGETGNGTSGAIYFDQVLVN EGGGFDRAS

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26	765	2	507	EDVKSYYTVHLPQLENINSGETRTISHFHYTTWPDFGVPQSPA SFLNFLFKVRESGSLNPDHGPVVIHRSAGTGRSSTFSVVHTCL VLMEKGDDINIKQVLLNIRKFQMGLI\QTPDQLRFSYMAITEG AKCVKGDSSIQKRWKELSKE/DLPPAFDHSPNKIMTEKYNR
27	766	84	852	LNRQRCGDQVLVPGTGLAAILRTLPMFHDEEHARARGLSEDTL VLPPASRNQRILYTVLECQPLFDSSDMTIAEWVCLAQTIKRHY EQYHGFVVIHGTDTMAFAASMLSFMLENLQKTVILTGAQVPIH ALWSDGRENLLGALLMAGQYVIPEVCLFFQNQLFRGNRATKVD ARRFAAFCSPNLLPLATVGADITINRELVRKVDGKAGLVVHSS MEQDVGLLRLYPGIPAALVRAFLQPPLKGVVMETFGSGNG
28	767	992	210	LFRLAPGFLRSLARQGYHQIWAFPFLPSGATATWPAASRSRSL AARSLPRSPARPGPNDALLGEHDFRGQGVRAQRFRFSEEPGPG ADGAVLEVHVPQIGAGVSLPGILAAKCGAEVILSDSSELPHCL EVCRQSCQMNNLPHLQVVGLTWGHISWDLLALPPQDIILASDV FFEPEDFEDILATIYFLMHKNPKVQLWSTYQVRSADWSLEALL YKWDMKCVHIPLESFDADKEDIAESTLPGRHTVEMLVISFAKD SL
29	768	23	624	SFIYKHTHRARFGPRAIVASPALTAGPHVSLTASCRVGMWVSC SPSPFLHPTNTLVAVLERDTLGIREVRLFNAVVRWSEAECQRQ QLQVTPENRRKVLGKALGLIRFPLMTIEEFAAGNRARAQGLVW EGSGTQVGIW/CTEDSAPEFTAESLADAWHIQIGRNLACEDAS T/WAIC*PRPGSVPTVHTARPRLSCLSSCF
30	769	100	2	MASTQDAELAVSRXRAIALXPGXQSXXPSQKKK
31	770	158	1957	LLKSCGVLLSGVCIPCEGKGPTVLVIQTAVPQDRPTKSSMRSA AKPWNPAIRAGGHGPDRVRPLPAASSGMKSSKSSTSLAFESRL SRLKRASSEDTLNKPGSTAASGVVRLKKTATAGAISELTESRL RSGTGAFTTTKRTGIPAPREFSVTVSRERSVPRGPSNPRKSVS SPTSSNTPTPTKHLRTPSTKPKQENEGGEK\VRLSPK/FRELL AEAKAKDSEINRLRSELKKYKEKRTLNAEGTDALGPNVDGTSV SPGDTEPMIRALEEKNKNFQKELSDLEEENRVLKEKLIYLEHS PNSEGAASHTGDSSCPTSITQESSFGSPTGNQLSSDIDEYKKN IHGNALRTSGSSSSDVTKASLSPDASDFEHITAETPSRPLSST SNPFKSSKCSTAGSSPNSVSELSLASLTEKIQKMEENHHSTAE ELQATLQELSDQQQMVQELTAENEKLVDEKTILETSFHQHRER AEQLSQENEKLMNLLQERVKNEEPTTQEGKIIELEQKCTGILE QGRFEREKLLNIQQQLTCSLRKVEEENQGALEMIKRLKEENEK LNEFLELERHNNNMMAKTLEECRVTLEGLKMENGSLKSHLQG
32	771	203	514	SQMHRLIFVYTLICANFCSCRDTSATPQSASIKALRNANLRRD ESNHLTDLYRRDETIQVKGNGYVQSPRFPNSYPRNLLLTWRLH SQENTRIQLVFDNQFGL

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33	772	59	713	PFKKMTDLLRSVVTVIDVFYKYTKQDGECGTLSKGELKELLEK ELHPVLKNPDDPDTVDVIMHMLDRDHDRRLDFTEFLLMIFKLT MACNKVLSKEYCKASGSKKHRRGHRHQEEESETEEDEEDTPGH KSGYRHSSWSEGEEHGYSSGHSRGTVKCRHGSNSRRLGRQGNL SSSGNQEGSQKRYHRSSCGHSWSGGKDRHGSSSVELRERINKS HIK
34	773	209	601	VPKISGPDHIDFIPWDQLFMASSSSVTEFLVLGFSSLGELQLV LFAVFLCLYLIILSGNIIIISVIHLDHSLHTPMYFFLGILSIS EIFYTTVILPKMLINLFSVFRTLSFVSCATQMFYEIVGPGTQE R
35	774	373	987	DHSTETPGIPAAEPVSHGTGKLERAPTLPAGAELPAPAAVPCP TL*VC/LYPQLLGLSVATMVTLTYFGAHFAVIRRASLEKNPYQ AVHQWGTQQRLIQHPESGSEGQSLLGPLRAFSAGLSLVGLLTL GAVLSAAATVREAQGLMAGGFLCFSLAFCAQVQVVFWRLHSPT QVEDAMLDTYDLVYEQAMKGTSHVRRQELAAIQ
36	775	102	466	QPGYSEYDKNRGQGMLLNMMCGRQLSAISLCLAVTFAPLFNAQ ADEPEVIPGDSPVAVSEQGEALPQAQATAIMAGIQPLPEGAAE KARTQIESQLPAGYKPVYLNQLQLLYAARGISCSV
37	776	2	430	RTRAADVYVFSLTGKSRNVSSSTVRRSAVGGMSALALFDLLKP NYALATQVEFTDPEIVAEYITYPSPNGHGEVRGYLVKPAKMSG KTPAVVVVHENRGLNPYIEDVARRVAKAGYIALAPDGLSSVGG YPGNDIKVVSAAA
38	777	106	556	VKQRHGNSLLTTETKCISCRLGVPLSPQRRFQAIRIEEVKLRW FAFLIVLLAGCSSKHDYTNPPWNAKVPVQRAMQWMPISQKAGA AWGVDPQLITAIIAIESGGNPNAVSKSNAIGLMQLKASTSGRD VYRRMGWSGEPTTSELKNSSR
39	778	3	892	HAAGIRHEAKPKRSFYAARDLYKYRHQYPNFKDIRYQNDLSNL RFYKNKIPFKPDGVYIEEVLSKWKGDYEKLEHNHTYIQWLFPL REQGLNFYAKELTTYEIEEFKKTKEAIRRFLLAYKMMLEFFGI KLTDKTGNVARAVNWQERFQHLNESQHNYLRITRILKSLGELG YESFKSPLVKFILHEALVENTIPNIKQSALEYFVYTIRDRRER RKLLRFAQKHYTPSENFIWGPPRKEQSEGSKAQKMSSPLASSH NSQTSMHKKAKDSKNSSSAVHLNSKTAEDKKVAPKEPV
40	779	123	395	ELQVFQPIGGMSDSGSQLGSMGSLTMKSQLQITVISAKLKENK KNWFGPSPYVEVTVDGQSKKTEKCNNTNSPKWKQPLTVIVTPV SKLH
41	780	173	438	IETLSFVIRNWNTHAMSKPIVMERGVKYRDADKMALIPVKNVA TEREALLRKPEWMKIKLPADSTRIQGIKAAMRKNGLHSVCEEA SC
42	781	287	393	PRMVLGKPQTDPTLEWFLSHCHIHKYPSKSTLIPQ
43	782	119	556	GLRISVQERIKACFTESIQTQIAAAEALPDAISRAAMTLVQSL LNGNKILCCGNGTSAANAQHFAASMINRFETERPSLPAIALNT DNVVLTAIANDRLHDEVYAKQVRALGHAGDVLLAISTRGNSRD IVKAVEAAVTRDTTIV

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44	783	248	554	KQTQHAPGMMKKYLALALIAPLLISCSTTKKGDTYNEAWVKDT NGFDILMGQFAHNIENIWGFKEVVIAGPKDYVKYTDQYQTRSH INFDDGTITIEPIPGT
45	784	77	311	TDRTALNPGQESAMNRLFSGRSDMPFALLLLAPSLLLLGGLVA WPMVSNIEISFLRLPLNPNIESTFVGVSNYVRILS
46	785	184	627	KELVDEKSERGRAMDPVSQLASAGTFRVLKEPLAFLRALELLF AIFAFATCGGYSGGLRLSVDCVNKTESNLSIDIAFAYPFRLHQ VTFEVPTCEGKERQKLALIGDSSSSAEFFVTVAVFAFLYSLAA TGRYIFFHNKNRENNRGPL
47	786	3	742	LGTVSYGADTMDEIQSHVRDSYSQMQSQAGGNNTGSTPLRKAQ SSAPKVRKSVSSRIHEAVKAIVLCHNVTPVYESRAGVTEETEF AEADQDFSDENRTYQASSPDEVALVQWTESVGLTLVSRDLTSM QLKTPSGQVLSFCILQLFPFTSESKRMGVIVRDESTAEITFYM KGADVAMSPIVQYNDWLEEECGNMAREGLRTLVVAKKALTEEQ YQDFEVSRLPGIPSSYDGAFLTLKLVLPVFV
48	787	864	335	EGPHR\RLFQMVKA/LQEAPEDPNQILIGYSRGLVVIWDLQGS RVLYHFLSSQQLENIWWQRDGRLLVSCHSDGSYCQW\PVSSEA QQPEPLRSLVPYGPFPCKAITRILWLTTRQGLPFTIFQGGMPR ASYGDRHCISVIHDGQQTAFDFTSRVIGFTVLTEADPAASRRA SGVGAQG
49	788	410	951	KQGLEVRDLHFKEITSGRALLRVACKRPSMVPGGQLQRAGAGA QARITGLSPALWGARVHGWIPELPAGLPPGACLWPLIPACPSR HWGWVSAPVKG/WAQAILGLALCL/RGEHRGLGAGVSKVRSLK MDRKVWTETLIEVGMPLLATDTWGLPHSTAVWVSQPPPYLSDH STLELERDPL
50	789	1	437	LSCNSEQALLSLVPVQRELLRRRYQSSPAKPDSSFYKGLGTCP SQLRLSEPPPTPRHLSVASVSHHMFPSHRSLCPHLPDFFAAPF PSDNLPYTLQSPFPSPPPATPSDHALILHH\DLNGGPDDPLQQ TGQLFGGLVRDIRRRYP
51	790	1	198	SPSSKLVGMWWAGRAGSSRTTSVSLLCLP/SAPFGASNLLVNP LEPQNADKIKIKIADLGNACWVV
52	791	3	435	RVDPRVRAPRCGDKIKNHMY\KCDCGSLKDCASDRCCETSCTL SLGSVCNTGLCCHKCKYAAPGVVCRDLGGICDLPEYCDGKKEE CPNDIYIQDGTPCSAVSVCIRGNCSDRDMQCQALFGYQVKDGS PACYRKLNRIGNRFGT
53	792	1	728	PGRPTRPDASLAQ/DPRTTMFRIPEFKWSPMHQRLLTDLLFAL ETDVHVWRS\HSTKSVMDFVNSNENIIFVHNTIHLISQMVDNI IIACGGILPLLSAATSPTGSKTELENIEVTQGMSAETAVTFLS RLMAMVDVLVFASSLNFSEIEAEKNMSSGGLMRQCLKLVCCVA VRNCLECRQRQRDRGNKSSHGSSKPQEVPQSVTATAASKTPLE NVPGNLSPIKDPDRLLQDVDINRLRAVVF

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54	793	2230	990	NSSGVKLLQALGLSPGNGKDHSILHSRNDLEEAFIHFMGKGAA AERFFSDKETFHDIAQVASEFPGAQHYVGGNAALIGQKFAANS DLKVLLCGPVGPKLHELLDDNVFVPPESLQEVDEFHLILEYQA GEEWGQLKAPHANRFIFSHDLSNGAMNMLEVFVSSLEEFQPDL GGLSGLHMMEGQSKELQRKRLLEVVTSISDIPTGIPV\HLELG \SMTNRELMSSIV\LQQVFPAVTSLGLNEQELLFLTQSASGPH SSLSSWNGVPDVGMVSDILFWILKEHGRSKSRASDLTRIHFHT LVYHILATVDGHWANQLAAVAAGARVAGTQACATETIDTSRVS LRAPQEFMTSHSEAGSRIVLNPNKPVVEWHREGISFHFTPVLV CKDPIRTVGLGDAISAEGLFYSEVHPHY
55	794	249	3	DDSSGWGLEQLVVRWSLALWPRLECSGMISAHCNLCL/LGSSD SPASAPRVAGITDVCHHAWLVFVFLVVMGFPHVGHVGLELL
56	795	2	1176	LGEVLKCQQGVSSLAFALAFLQRMDMKPLVVLGLPAPTAPSGC LSFWEAKAQLAKSCKVLVDALRHNAAAAVPFFGGGSVLRAAEP APHASYGGIVSVETDLLQWCLESGSIPILCPIGETAARRSVLL DSLEVTASLAKALRPTKIIFLNNTGGLRDSSHKVLSNVNLPAD LDLVCNAEWVSTKERQQMRLIVDVLSRLPHHSSAVITAASTLL TELFSNKGSGTLFKNAERMLRVRSLDKLDQGRLVDLVNASFGK KLRDDYLASLRPRLHSIYVSEGYNAAAILTMEPVLGGTPYLDK FVVSSSRQGQGSGQMLWECLRRDLQTLFWRSRVTNPINPWYFK HSDGSFSNKQWIFFWFGLADIRDSYELVNHAKGLPDSFHKPAS DPGS
57	796	755	374	YHAPALQPGQQSKTLSQEKKNFFRPGAVAHTCNPSTLGGRGGR ITRSGDRDHPG*HGETPSLLKIQKKLAGRDGGRL*SQLLGRLR QENGVNPGGGGCSEPRLRHCTPAW*QSETISRKKRKKERKY
58	797	2	476	FRPIGIIRQALCSADGHQRRILTLRLGLLVIPFLPASNLFFRV GFVVPSVGCCVMLLFGFG/ALRKHTEKKKLIAAVVLGILLS/N DAERLRCAVRGGEWRSE/EAVFRGAVSVCPLSAEVRCNIGRNL AAKGNQTGAIRYHREAVSLNPKTKSSTREFRPC
59	798	3	711	KIADFGFSNLFTPGQLLKTWCGSPPYAAPELFEGKEYDGPKVD IWSLGVVLYVLVCGALPFDGSTLQNLRARVLSGKFRIPFFMST ECEHLIRHMLVLDPNKRLSMEQICKHKWMKLGDADPNFDRLIA ECQQLKEERQVDPLNEDVLLAMEDMGLDKEQTLQSLRSDAYDH YSAIYSLLCDRHKRHKTLRLGALPSMPRALGLSSTSQYP\AEQ AGTAMNISVPQVQLINPENQIV
60	799	2	344	AREFLGHRASITWS*ARVHHRFPKAEVA*P/SLLRTDLTEDRT KCCHGDLLECADDRADLVEDIWENQDSISTILIECCEKPLLEK SHCIAEVENDEMPADLPSLAADFVESKDV

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61	800	142	594	VPPKMKRGTSLHSRRGKPEAPKGSPQINRKSGQEMTAVMQSGR PRSSSTTDAPTGSAMMEIACAAAAAAAACLPGEEGTAERIERL EVSSLAQTSSAVASSTDGSIHTDSVDGTPDPQRTKAAIAHLQQ KILKLTEQIKIAQTARRNRRPGS*KDCTP*KCLRKSDEALNRV LQQI\RVPPKMKRGTSLHSRRGKPEAPKGSPQINRKSGQEMTA VMQSGRPRSSSTTDAPTGSAMMEIACAAAAAAAACLPGEEGTA ERIERLEVSSLAQTSSAVASSTDGSIHTDSVDGTPDPQRTKAA IAHLQQKILKLTEQIKIAQTARRNRRPG
62	801	232	1299	MQTIERLVKERDDLMSALVSVRSSLADTQQREASAYEQVKQVL QISEEANFEKTKALIQCDQLRKELERQAERLEKELASQQEKRA IEKDMMKKEITKEREYMGSKMLILSQNIAQLEAQVEKVTKEKI SAINQLEEIQSQLASREMDVTKVCGEMRYQLNKTNMEKDEAEK EHREFRAKTNRDLEIKDQEIEKLRIELDESKQHLEQEQQKAAL AREECLRLTELLGESEHQLHLTRQEKDSIQQSFSKEAKAQALQ AQQREQELTQKIQQMEAQHDKTENEQYLLLTSQNTFLTKLKEE CCTLAKKLEQISQKTRSEIAQLSQEKRYTYDKLGKLQRRNEEL EEQCVQHGRST*
63	802	3	334	SYPVWWNSPLTAEVPPELLAAAGFFHTGHQDKVRCFFCYGGLQ SWKRGDDPWTEHAKWFPSCQFLLRSKGRDFVHSVQETHSQLLG SWDPWEEPEDAAPVAPSVPASGYPELPTPRREVQSESAQEPGG VSPAEAQRAWWVLEPPGARDVEAQLRRLQEERTCKVCLDRAVS IVFVPCGHLVC\AECAPGLQLCPI\CRSPCGPLRPCLWVP
64	803	70	456	MCSYREKKAEPQELLQLDGYTVDYTDPQPGLEGGRAFFNAVKE GDTVIFASDDEQDRILWVQAMYRATGQSHKPVPPTQVQKLNAK GGNVPQLDAPISQFYADRAQKHGMDEFISSNPCNFDHASLFEM *
65	804	2	1376	KQLIVLGNKVDLLPQDAPGYRQRLRERLWEDCARAGLLLAPGH QGPQRPVKDEPQDGENPNPPNWSRTVVRDVRLISAKTGYGVEE LISALQRSWRYRGDVYLVGATNAGKSTLFNTLLESDYCTAKGS EAIDRATISPWPGTTLNLLKFPICNPTPYRMFKRHQRLKKDST QAEEDLSEQEQNQLNVLKKHGYVVGRVGRTFLYSEEQKDNIPF EFDADSLAFDMENDPVMGTHKSTKQVELTAQDVKDAHWFYDTP GITKENCILNLLTEKEVNIVLPTQSIVPRTFVLKPGMVLFLGA IGRIDFLQGNQSAWFTVVASNILPVHITSLDRADALYQKHAGH TLLQIPMGGKERMAGFPPLVAEDIMLKEGLGASEAVADIKFSS AGWVSVTPNFKDRLHLRGYTPEGTVLTVRPPLLPYIVNIKGQR IKKSVAYKTKKPPSLMYNVRKKKGKINV
66	805	1	874	STVASMMHRQETVECLRKFNARRKLKGAILTTMLVSRNFSAAK SLLNKKSDGGVKPQSNNKNSLVSPAQEPAPLQTAMEPQTTVVH NATDGIKGSTESCNTTTEDEDLKAAPLRTGNGSSVPEGRSSRD RTAPSAGMQPQPSLCSSAMRKQEIIKITEQLIEAINNGDFEAY TKICDPGLTSFEPEALGNLVEGMDFHKFYFENLLSKNSKPIHT TILNPHVHVIGEDAACIAYIRLTQYIDGQGRPSNPAKSEE\TR VWH\RR\DGKWLNVHYHCSGAPCPHRCSELSHRGF

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67	806	3	1714	LPKNVVFVLDSSASMVGTKLRQTKDALFTILHDLRPQDRFSII GFSNRIKVWKDHLISVTPDSIRDGKVYIHHMSPTGGTDINGAL QRAIRLLNKYVAHSGIGDRRVSLIVFLTDGKPTVGETHTLKIL NNTREAARGQVCIFTIGIGNDVDFRLLEKLSLENCGLTRRVHE EEDAGSQLIGFYDEIRTPLLSDIRIDYPPSSVVQATKTLFPNY FNGSEIIIAGKLVDRKLDHLHVEVTASNSKKFIILKTDVPVRP QKAGKDVTGSPRPGGDGEGDTNHIERLWSYLTTKELLSSWLQS DDEPEKERLRQRAQALAVSYRFLTPFTSMKLRGPVPRMDGLEE AHGMSAAMGPEPVVQSVRGAGTQPGPLLKKPYQPRIKISKTSV DGDPHFVVDFPLSRLTVCFNIDGQPGDILRLVSDHRDSGVTVN GELIGAPAPPNGHKKQRTYLRTITILINKPERSYLEITPSRVI LDGGDRLVLPCNQSVVVGSWGLEVSVSANANVTVTIQGSIAFV ILIHLYKKPAPFQRHHLGFYIANSEGLSSNCRVFCESGILIQE LTQQSVAVAGR
68	807	2	841	FFLEQVSQYTFAMCSYREKKSEPQELMQLEGYTVDYTDPHPGL QGGCMFFNAVKEGDTVIFASDDEQDRILWVQAMYRATGQSYKP VPAIQTQKLNPKGGTLHADAQLYADRFQKHGMDEFISANPCKL DHAFLFRILQRQTLDHRLNDSYSCLGWFSPGQVFVLDEYCARY GVRGCHRHLCYLAELMEHSENGAVIDPTLLHYSFAFCAS\HVH GNRPDGIGTVSVEEKERFEEIKERLSSLLENQISHFRYCFPFG RPEGALKATLSLLERVLMKDIA
69	808	2	757	DGLLHEVLNGLLDRPDWEEAVKMPVGILPCGSGNALAGAVNQH GGFEPALGLDLLLNCSLLLCRGGGHPLDLLSVTLASGSRCFSF LSVAWGFVSDVDIQSERFRALGSARFTLGTVLGLATLHTYRGR LSYLPATVEPASPTPAHSLPRAKSELTLTPDPAPPMAHSPLHR SVSDLPLPLPQPALASPGSPEPLPILSLNGGGPELAGDWGGAG DAPLSPDPQLSSPPGSPKAALHSPV*KKAPVIPPDM
70	809	3	530	KGVPTLLMAAGSFYDILAITGFNTCLGIAFSTGSTVFNVLRGV LEVVIGVATGSVLGFFIQYFPSRDQDKLVCKRTFLVLGLSVLA VFSSVHFGFPGSGGLCTLVMAFLAGMGWTSEKAEVEKIIAVAW DIFQPLLFGLIG\AEVSI\SSLRPETVGLCVATVGI\AVLIRI FDYIF
71	810	228	541	LLKEVVVQASPVCKTCCSQLVRTPVTFTEVQNV/CRCSAGYLI SVCSYTSSDHNQCYAGTASLALLWIGGILKGCLLWKQFRWTER SHWNFGYWALWSPGNGNGC
72	811	173	404	ICTSTYLQIFPGKPSCFMCKGRLMCIYFILWYLGHYTSLHWNW CRYISDPNVD/ACPDPRNAEVSMTHTVPALMELID
73	812	2	586	LESLPGFKEIVSRGVKVDYLTPDFPSLSYPNYYTLMTGRHCEV HQMIGNYMWDPTTNKSFDIGVNKDSLMPLWWNGSEPLWVTLTK AKRKVYMYYWPGCEVEILGVRPTYCLEYKNVPTDINFANAVSD ALDSFKSGRADLAAIYHERIDVEGHHYGPASPQRKDALKA\VD TVLKYMTKWIQERGLQDRLNVII

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74	813	2	348	ARDFHPKQTLDFLRSDMANSKITEEVKRSIAQQYLDLTVA/LE QVDPDAEVDAAPSTTSSCGH*DSHAGS*RVLSLLGD*GPA*TG ANSMAGKLLLVAWLGFPDPFWGKELSDPAFK
75	814	2	366	KQSGDVTCNCTDGRLAPSCLTCVGHCIFGGYCTMNSKMMPECQ SPPHMTGPRCEEHVFSQHQPGHITSILIPML*LLLLVLVAGVI FCHKRRVQGAKGFQHQRMTNGAMNAQIANPTYKMY
76	815	420	681	TVENAGRWL*EEAEIQAELERLERVRNLHIRELKRINNEDNSQ FKDHPTLNERYLLLHLLGRGGFSEVYKVMYGLFWFFYTNVARI
77	816	37	428	MCEEFLVMGKGCSCVF*ILLSNPQMWWLNDSNPETDNRQESPS QENIDRVSD/MAFVPSAWTASGGVAWGNLGESGSRTGGVRAET LAPRLQV*PAHLRGHPRSNRGQGRPPWKAGKLGKCQEVLFRFA AF
78	817	1	358	FRAMFLAVQHDCRPMDKSAGSGHKSEEKREKMKRTLLKDWKTR LSYFLQNSSTPGKPKTGKKSKQQAFIK*VENPELANINS*LLN *KGEL**A*ANIQNLSCRPSPEEAQLWSEAFDE
79	818	1	169	GFFNFSSPKLKGWKINSSLVLEIRKNILRFLDAERDVSVVKSS FPSKDARHSSVHR*FTQLHWGPPSHTPARP*RGFFNFSSPKLK GWKINSSLVLEIRKNILRFLDAERDVSVVKSSFPSKDARHSSV HR
80	819	55	310	RIDDQQELKRVT*YSQKEYTKKKLHKKCNIIQADIKPDNILDN ESITILKLSDFGSASHVADNDITPSSSQTTSAASSPPRTLRR
81	820	1	134	SSKPWD*SLAPKHSG*TKNMDCYCIIPTCIGRERCYGTCIGDT V
82	821	187	360	NSSKKLVMEHQWKKYLRRNYQRMLNRLITLIGSCGVL*LISTI PTSRLKFLKETGHGTPMEEIPEEELSEDVEQIDHADRELRRGQ NLRCKGIHRLPTHIQVGQN
83	822	208	723	KWMLLHSFKIFCLSLYPQL*CPFEFFSHSATIFHELVYKQTKI ISSNQELIYEGRRLVLEPGRLAQHFPKTTEENPIFVVSREPLN TIGLIYEKISLPKVHPRYDLDGDASMAKAITGVVCYACRIAST LLLYQELMRKGIRWLIELIKDDYNETVHKKTEVVITLGFLVSR
84	823	1	314	GTRKMGPTVSPICLPGTWGDYNLMDGDLGLISGWGRTEKRDRA DRLKAGRSPAAG*RKWEPGRGDPTWEESEEDVHKSKWTRCVDE KGA*C*TDNKRPLRCGVT
85	824	3	302	HELENLIKSAHSYSLY*G*YLHGA*TAEPEASFCPRRGWNRQA GAAGSRMNFRPGVLSSRQLGLPGPPDGPDYTVYYPFHRLAMVT AASRLEREHLTHL
86	825	87	422	PVPLPHPILEVCPGQ*EPQSAISLTAFQVQAGASRASPGPPAP SSSKPGRKAKVASPCPDRPAPPPT*PRPAAAPGSESSPRPPRP RTGRRQQRAHARRAAARTAPWRPSC
87	826	3	289	HEGRRRGWASASQRFLRNWAFLTPSKVRRLKGQKAFGKLPSHS DTSLTSDLGFHHRFNPNASSSFKPSGTKFAIQYGTGRVDGILS EDKLTVSGL
88	827	1	101	GRNIMHYPNGHAICIANGHCIIL*NSHNIKVWV

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89	828	1	535	INLGNTCYMNSVI*ALFMATDFRRQVLSLNLNGCNSLMKKLQH LFAFLAHTQREAYAPRIFFEASRPPWFTPRSQQDCSEYLRFLL DRLHEEEKILKVQASHKPSEILECSETSLQEVASKAAVLTETP RTSDGEKTLIEKMFGGKLRTHIRCLNCTSTSQKVEAFTDLSLA FWPSSS
90	829	1	434	ARDDPRVRLSLSPNFF*LASKLGKQWTPLIILANSLSGTNMGE
91	830	3	782	MHRIKLNDRMTFPEELDMSTFIDVEDEKSPQTESCTDSGAENE GSCHSDQMSNDFSNDDGVDEGICLETNSGTEKISKSGLEKNSL IYELFSVMVHSGSAAGGHYYACIKSFSDEQWYSFNDQHVSRIT QEDIKKTHGGSSGSRGYYSSAFASSTNAYMLIYRLKDPARNAK FLEVDEYPEHIKNLVQKERELEEQEKRQREIERNTCKIKLFCL HPTKQVMMED*IEVHKDKTLKEAVEMAYKMMDLEEVIPLDCCR L
92	831	2	604	SVMPVPALCLLWALAMVTRPASAAPMGGPELAQHEELTLLFHG TLQLGQALNGVYRTTEGRLTKARNSLGLYGRTIELLGQEVSRG RDAAQELRASLLETQMEEDILQLQAEATAEVLGEVAQAQKVLR DSVQRLEVQLRSAWLGPAYREFEVLKAHADKQSHILWALTGHV QRQRREMVAQQHRLRQIQERLHTAALPA
93	832	16	690	ITSVDPRVRGNASTGYGKIWLDDVSCDGDESDLWSCRNSGWGN NDCSHSEDVGVICSDASDMELRLVGGSSRCAGKVEVNVQGAVG ILCANGWGMNIAEVVCRQLECGSAIRVSREPHFTERTLHILMS NSGCAGGEASLWDCIRWEWKQTACHLNMEASLICSAHRQPRLV GADMPCSGRVEVKHAHTWRSVCDSDFSLHAANVLCRELNCGDA ISLSVGDHFG
94	833	108	727	SNYPSSRFRVAGITGVKLGMRSIPIATACTIYHKPFCETNLDA YDPYLIAMSSIYLAGKVEEQHLRTRDIINVSNRYFNPSGEPLE LDSRFWELRDSIVQCELLMLRVLRFQVSFQHPHKYLLHYLVSL QNWLNRHSWQRTPVAVTAWALLRDSYHGALCLRFQAQHIAVAV LYLALQVYGVEVPAEVEA/DEAVGWQIYAMDTEIP
95	834	118	376	RGSRHAVHGWAFGLLFINKESVVMAYLFTTFNAFQGVFIFVFH CALQKKVRSRRGPGSQPPLETFPGYPGEGGEGGGDSGAPSSPQ
96	835	3	333	ARKDDLPPNMRFHEEKRLDFEWTLKAG*EKG*PSK*NKGWEGQ E***TVRD*GIS**VKPQHLS*\ALQMALKRVYTLLSSWNCLE DFDQIFWGQKSALAGQWFPEVSIIP
97	836	740	951	GKQQRETLRRPSPTISVQRAGSPEHSSASH*HSPCPAPGQRVL PTALCTLMTSKHFHGCPLAGQGRAVTL

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98	837	81	1503	GVCGLPRFCGSIILCHYEMSSLGASFVQIKFDDLQFFENCGGG SFGSVYRAKWISQDKEVAVKKLLKIEKEAEILSVLSHRNIIQF YGVILEPPNYGIVTEYASLGSLYDYINSNRSEEMDMDHIMTWA TDVAKGMHYLHMEAPVKVIHRDLKSRNVVIAADGVLKICDFGA SRFHNHTTHMSLVGTFPWMAPEVIQSLPVSETCDTYSYGVVLW EMLTREVPFKGLEGLQVAWLVVEKNERLTIPSSCPRSFAELLH QCWEADAKKRPSFKQIISILESMSNDTSLPDKCNSFLHNKAEW RCEIEATLERLKKLERDLSFKEQELKERERRLKMWEQKLTEQS NTPLLLPLAARMSEESYFESKTEESNSAEMSCQITATSNGEGH GMNPSLQAMMLMGFGDIFSMNKAGAVMHSGMQINMQAKQNSSK TTSKRRGKKVNMALGFSDFDLSEGDDDDDDDGEEEYNDMDNSE
99	838	185	328	MLWETGCSAACRVTVSPTVTFATFSTRGIDAMRPGPSFLWRQQ LSQG*
100	839	1	348	PTLGDQPDLHSITRASRPKLCTRKNCNPLTITVHDPNSTQ*YY GMSWELRFYIPGFDVGTMFTIQKILVSWSPPKPIGPLTDLGDP MFQKPPNKVDLTVPPPFLVIKDTLQKFEKI
101	840	1	416	SLNNVTLPQAKTEKDFIQLCTPGVIKQEKLGTVYCQASSPGAN MIGNKMSAISVHGVSTSGGQMYHYDMNTASLSQQ*DQKPIFNV IPPIPVGSENWNRCQGSGDDNLTSLGTLNFPGRTVSFSFEMES RSVAQAGVQ
102	841	105	354	RHTQECRCPHTHIHTHTHSHTHSHTHSHSHSHTTPRCSHTQPP HAQAPALC*S*EDRGQPTWKLCAHRPRLKVIKEGGWLGG
103	842	171	347	NYSLSVYLVRQLTAGTLLQKLRAKGIRNPDHSRALSE*HLSSL PHLIWIQVFLALQPS
104	843	2	690	ATYIVDFGFSTTFREGQMLTAFCGMYPYVAPERSLGQACQ*PA RDIQSLSVILYFRNTVGRRARTLPFYS/AEASKLQEKILTGRY HAPPLLALQLDSL/IKLLMLNARKCPSL*LMKNPWVKSSQKMP LIPYEEPL/RGPPQTIQLMVAMGFQAKNISVAIIERKFNYPMA TYLILEHTKQERKCSTIRELSLPPGVPTSPSPSTELSTFPLSL MRAHREPAFNVQPPEESQ
105	844	2	777	AKQELAKLMRIEDPSLLNSRVLLHHAKAGTIIARQGDQDVSLH FVLWGCLHVYQRMIDKAEDVCLFVAQPGELVGQLAVLTGEPLI FTLRAQRDCTFLRISKSDFYEIMRAQPSVVLSAAHTVAARMSP FVRQMDFAIDWTAVEAGRALYRCSSHRAAQARPRGGDLGVVRP C*PPRPLRQGDRSDCTYIVLNGRLRSVIQRGSGKKELVGEYGR GDLIGVVSATPTH*PLAFSRPVPRQLTRIIPGNPGSGEVFPGA
106	845	3	709	HASGWTPGTTQTLGQGTAWDTVASTPGTSETTASAEGRRTPGA TRPAAPGTGSWAEGSVKAPAPIPESPPSKSRSMSNTTEGVWEG TRSSVTNRARASKDRREMTTTKADRPREDIEGVRIALDAAKKV LGTIGPPALVSETLAWEILPQATPVSKQQSQGSIGETTPAAGM WTLGTPAADVWILGTPAADVWTSMEAASGEGSAAGDLDAATGD RGPQATLSQTPAV*PWGPPG

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107	846	3	406	AGTSGTGDTGPGNTAVSGTPVVSPGATPGAPGSSTPGEADIGN TSFGKSGTPTVSAASTTSSPVSKHTDAASATAVTISGSKPGTP GTPGGATSGGKITPGIA*PTLDQKSPCFSGYGGYFPVNPHQNP CADSL
108	847	1	565	RAHRCCLPLPSLSCEIQIGFS*SSIFPGQ*ACPCSCCRSCRRN WPQSPRCPHHPPAPCSLLLSSCLPPPLSCSWRGTSGKPPSQSP AASRSMRPRCSPRTSSLRGASCRGPGGSAPAAASGPRCRGCSR SPRRCSRSGCAAASPPRSQRRSPPLSPPPFPTSGTLLLKTSRF GSATRE*SSPRPRPRP
109	848	2	987	DDVPPPAPDLYDVPPGLRRPGPGTLYDVPRERVLPPEVADGGV VDSGVYAVPPPAEREAPAEGKRLSASSTGSTRSSQSASSLEVA GPGREPLELEVAVEALARLQQGVSATVAHLLDLAGSAGATGSW RSPSEPQEPLVQDLQAAVAAVQSAVHELLEFARSAVGNAAHTS DRALHAKLSRQLQKMEDVHQTLVAHGQALDAGRGGSGATLEDL DRLVACSRAVPEDAKQLASFLHGNASLLFRRTKATAPGPEGGG TLHPNPTDKTSSIQSRPLPSPPKFTSQDSPDGQYENSEGGWME DYDYVHLTGGRRSF*KTQKELLGKRAA
110	849	84	372	MATDEENVYGLEENAQSRQESTRRLILVGRTGAGKSATGNSIL GQRRFFSRLGATSVTRACTTGSRRWDKCHVEVVDTPDIFSSQV SKTDPGCEERX*
111	850	2	47	TLGLRSLTKEGGGGGDVAAFEVGTGAAASRALGQCGQLQKLIV IFIGSLCGLCTKCAVSNDLTQQEIQTPEIQQRNA*CDSRVTFT NEGGRWWG
112	851	1192	1040	FFFLVETRFHHIGQAGLELLTLSIK*SARLGLPKCWDDRREPP YLAGFMI
113	852	791	362	RRSPPPAPPPLPSPLSPPPRAPVSPASTMPILLFLIDTSASMN QRSHLGTTYLDTAKGAVETFMKLRARDPASRGDRYMLVTFEEP PYAIKAGWKENHATFMNELKNLQAEGLTTLGQSLRTAFDLLNL NRLVTGIDNYGQVG
114	853	812	348	NCRTYVFCFVLVFRLLFLHGSPLSPSLLSRAGLLCGSAENPTP FLCGITMAAGVSLLALVVRVILSTAILCPSGASRRQRSSEVEW GTDSGVYRLYCWRVGFLGPGGELRLGLSEARGGRVWGRGEKRC RVWAVRSLRKGFGSVAALRRGIWAG
115	854	93	170	VTPTPPQYYTCSCVLGFIACSIFLQMSLKPKVMLLTVALVACL VLFNLSQCWQRDCCSQGLGNLTEPSGTNR*GPAAVSWASLPAP SSCR
116	855	1	183	GKAGGAAGLFAKQVQKKFSRAQEK*TRRFGKTCQPEERAREER QEGPEIEFGFSFFSLSLY

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117	856	53	2400	PKRLFLFQDVNTLQGGGQPVVTPSVQPSLQPAHPALPQMTSQA PQPSVTGLQAPSAALMQVSSLDSHSAVSGNAQSFQPYAGMQAY AYPQASAVTSQLQPVRPLYPAPLSQPPHFQGSGDMASFLMTEA RQHNTEIRMAVSKVADKMDHLMTKVEELQKHSAGNSMLIPSMS VTMETSMIMSNIQRIIQENERLKQEILEKSNRIEEQNDKISEL IERNQRYVEQSNLMMEKRNNSLQTATENTQARVLHAEQEKAKV TEELAAATAQVSHLQLKMTAHQKKETELQMLTESLKETDLLR GQLTKVQAKLSELQETSEQAQSKFKSEKQNRKQLELKVTSLEE ELTDLRVEKESLEKNLSERKKKSAQERSQAEEEIDEIRKSYQE ELDKLRQLLKKTRVSTDQAAAEQLSLVQAELQTQWEAKCEHLL ASAKDEHLQQYQEVCAQRDAYQQKLVQLQEKSVCFA\CLALQA QITALTKQNEQHIKELEKNKSQMSGVEAAASDPSEKVKKIMNQ VFQSLRREFELEESYNGRTILGTIMNTIKMVTLQLLNQQEQEK EESSSEEEEEKAEERPRRPSQEQSASASSGQPQAPLNRERPES PMVPSEQVVEEAVPLPPQALTTSQDGHRRKGDSEAEALSEIKD GSLPPELSCIPSHRVLGPPTSIPPEPLGPVSMDSECEESLAAS PMAAK\PDNPSGK\VCVQGK*APDGPTYKE\SSTRLFPGFQDP E\EGDPLALGLE\SPG\EPQPPQLQGKVDVH*VPPVPHKGAFQ EQEGRFPQFCRE
118	857	1	791	SETAQQIIDRLRVKLAKEPGANLFLMAVQDIRVGGRQSNASYQ YTLLSDDLAALREWEPKIRKKLATLPELADVNSDQQDNGAEMN LVYDRDTMARLGIDVQAANSLLNNAFGQRQISTIYQPMNQYKV VMEVDPRYTQDISALEKMFVINNEGKAIPLSYFAKWQPANAPL SVNHQGLSAALTISFNLPTGKSLSDASAAIDRAMSQLGVPSTV RGSFAGPAQVFQETMNSQVILIIAAIATVYIVLGIPYERYVHP PTILL*RPGANLFLMAVQDIRVGGRQSNASYQYTLLSDDLAAL REWEPKIRKKLATLPELADVNSDQQDNGAEMNLVYDRDTMARL GIDVQAANSLLNNAFGQRQISTIYQPMNQYKVVMEVDPRYTQD ISALEKMFVINNEGKAIPLSYFAKWQPANAPLSVNHQGLSAAL TISFNLPTGKSLSDASAAIDRAMSQLGVPSTVRGSFAGPAQVF QETMNSQVILIIAAIATVYIVLGIPYERYVHPPTILL
119	858	3	417	IITPDAMGCQKDIAEKIQKQGGDYLFAVKGNQGRLNKAFEEKF PLKELNNPEHDSYAISEKSHGREEIRLHIVCDVPDELIDFTFE WKGLKKLCVAVSFRSIIAEQKKEPEMTVRYNIS*LGIAGDISV TAISGTDD
120	859	2	373	HYLKMLTQARREVIIANAYFFPGYRFLHALRKAARRGVRIKLI IQGEPDMPIVRVGARLLYNYLVKGGVQVFEYRRRPLHGKVALM DDHWATVGSSNLHPVS*SGNLQANVILHVLRVPTLNP
121	860	286	495	CWSKSAAFHSKLATTCIVPVCAAGHCSAAW*SLRPIEALAKEV RELK*HTR*LLNPATTRELTSLGRNLNRLLKSERERYDKYRTT LTDLTHSLKTPLAVLQSTLRSLRSEKMSVSDAEPVMLEQISRI SQQIGYYLHRASMRGGTLLSRELHPVAPLLDNLTSALIKGKPR KGGNVTVFPFTAMYRDGH

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122	861	2	725	GNTVMFQHLMQKRKHTQWTYGPLTSTLYDLTEIDSSGDEQSLL ELIITTKKREARQILDQTPVKELVSLKWKRYGRPYFCMLGAIY LLYIICFTMCCIYRPLKPRTNNRTSPRDNTLLQQKLLQEAYMT PKDDIRLVGELVTVIGAIIILLVEVPDIFRMGVTRFFGQTILG GPFHVLIITYAFMVLVTMVMRLISASGEVVPMSFALVLGWCNV MYFARGFQMLGPFTIMIQKMIFGDLM
123	862	1	135	EKAAAANIDEVQKSDVSSTGQGVIDKDALGPMMLEVAHLHFSA VF
124	863	2	364	LEVPSEVTPLGFAMQATKTLLLRTCCLQEFNIMEKNKGWALLG GKDGHLQGLFLLANALLERNQLLAQKVMYLLVPLLNRGNDKHK LTSAGFFVELLRSPVAKRLPSIYSVARFKDWLQD
125	864	1	374	RPAPAPSAAPEEAPSP\GVKGRGMAKRRVPAPVWGGAGGGTKS ARRAAAAPDTERSEEGGRAVKEAYPSSRQPPPPSP*PLRCARR CHPNLAPSMPISNREGKGKRREEKIRPLSPASTHTSARA
126	865	3	364	LQGVHGSSSTFCSSLSSDFDPLEYCSPKGDPQRVDMQPSVTSR PRSLDSEVPTGETQVSSHVHYHRHRHHHYKKRFQRHGRKPGPE TGVPQSRPPIPRTQPQPEPPSPDQQVTRSNSAAP
127	866	2	250	MADPDPRYPRSSIEDDFNYGSSEASDTVHIRMAFLRRVYSILS LQDLLATVTSTDNLAFEDGRTDWLQRPDCVSFKIHVLPM
128	867	194	375	AGMSVVVVPPIGSSYLGLISQEHFPNEFTSGDGKKAHQDFGYF YGSSYVAASDSSRTPGL
129	868	104	339	VAAALTLFPQQLSPPGAWGLGLSACFCCAEGFSRLNQQVLSSS LLLLSRTNCPCKYSFLDNLKKLTPRRDVPTYPKVR
130	869	2	360	RDDACLYSPASAPEVITVGATNAQDQPVTLGTLGTNFGRCVDL FAPGEDIIGASSDCSTCFVSQSGTSQAAAHVAGIAAMMLSAEP ELTLAELRQRLIHFSAKDVINEAWFPEDQRVLT
131	870	2	105	LEIKFLEQVDQFYDDNFPMEIRHLLAQWIENQDW
132	871	2	466	EAGDADEDEADANSSDCEPEGPVEAEEPPQEDSSSQSDSVEDR SEDEEDEHSEEEETSGSSASEESESEESEDAQSQSQADEEEED DDFGVEYLLARDEEQSEADAGSGPPTPGPTTLGPKKEITDIAA AAESLQPKGYTLATTQVKTPIPLLL
133	872	1	354	LKNLRELLLEDNQLPQIPSGLPESLTELSLIQTNIYNITKEGI SRLINLKNLYLAWNCYFNKVCEKTNIEDGVFETLTNLELLSLS FNSLSHVPPKLPSSLRKLFLSNTQIKYISEED
134	873	59	184	MRSQALGQSAPSLTASLKELSLPRRGSFPVCPNAGRTSPLG*
135	874	1	210	LLCVCLPVGACPSLSLLTAPLNQLMRCLRKYQSRTPSPLLHSV PSEIVFDFEPGPVFRGSWALLSWSTRP
136	875	131	254	QTPDKKQNDQRNRKRKAEPYETSQGSNNFVSTKVLNSNVLR
137	876	84	504	YFIIKGMVELVPASDTLRKIQVEYGVTGSFKDKPLAEWLRKYN PSEEEYEKASENFIYSCAGCCVATYVLGICDRHNDNIMLRSTG HMFHIDFGKFLGHAQMFGSFKRDRAPFVLTSDMAYVINGGEKP TIRFQLFVDL

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
138	877	3	215	PSPLPSLSLPPPVAPGGQESPSPHTAEVESEASPPPARPLPGE ARLAPISEEGKPQLVGRF\QVTSSK\NRLSLFPCSQHPPLSLV LQNLQPLSSLQRAQIQRTV/PGGGPETREALAESDRAAEGLGA GVEEEGDDGKEPQVGGSPQPLSHPSPVWMNYSYSSLCLSSEES ESSGEDEEFWAELQSLRQKHLSEVETLQTLQKKEIEDLYSRLG KQPPPGIVAPAAMLSSRQRRLSKGSFPTSRRNSLQRSEPPGPG ETA/GHPASIFSLRPLSVDCFSPGPGGLPRGNRPPLPTSPFLT *CSPSPHTAEVESEASPPPARPLPGEARLAPISEEGKPQLVGR FPSDFIQGTG
139	878	1	337	RRFVSQETGNLYIAKVEKSDVGNYTCVVTNTVTNHKVLGPPTP LILRNDGVMGEYEPKIEVQFPETVPTAKGATVKLECFALGNPV PTIIWRRADGKPIARKARRHKSRVGK
140	879	72	917	MLRTCYVLCSQAGPRSRGWQSLSFDGGAFHLKGTGELTRALLV LRLCAWPPLVTHGLLLQAWSRRLLGSRLSGAFLRASVYGQFVA GETAEEVKGCVQQLRTLSLRPLLAVPTEEEPDSAAKSGEAWYE GNLGAMLRCVDLSRGLLEPPSLAEASLMQLKVTALTSTRLCKE LASWVRRPGASLELSPERLAEAMDSGQNLQVSCLNAEQNQHLR ASLSRLHRVAQYARAQHVRLLVDAEYTSLNPALSLLVAALAVR WNSPGEGGPWVWNTYQACLKDTF*
141	880	219	308	PHHRIAGDTAIDKNIHQSVSEQIKKNFAK
142	881	182	317	QMTNPFFLCFTTMISNCNFFKGPPGPPGEKGDRGPTGESGPRG FP
143	882	177	341	NGIIASFFLRTFIFCFIHIQGCQAGQTIKVQVSFDLLSLMFTF VSPCTNDLIIH
144	883	3	1441	KLSVNHRRTHLTKLMHTVEQATLRISQSFQKTTEFDTNSTDIA LKVFFFDSYNMKHIHPHMNMDGDYINIFPKRKAAYDSNGNVAV AFLYYKSIGPLLSSSDNFLLKPQNYDNSEEEERVISSVISVSM SSNPPTLYELEKITFTLSHRKVTDRYRSLCAFWNYSPDTMNGS WSSEGCELTYSNETHTSCRCNHLTHFAILMSSGPSIGIKDYNI LTRITQLGIIISLICLAICIFTFWFFSEIQSTRTTIHKNLCCS LFLAELVFLVGINTNTNKLFCSIIAGLLHYFFLAAFAWMCIEG IHLYLIVVGVIYNKGFLHKNFYIFGYLSPAVVVGFSAALGYRY YGTTKVCWLSTENNFIWSFIGPACLIILVNLLAFGVIIYKVFR HTAGLKPEVSCFENIRSCARGALALLFLLGTTWIFGVLHVVHA SVVTAYLFTVSNAFQGMFIFLFLCVLSRKIQEEYYRLFKNVPC CFGCLR
145	884	1	429	GTREAAPSRFMFLLFLLTCELAAEVAAEVEKSSDGPGAAQEPT WLTDVPAAMEFIAATEVAVIGFFQDLEIPAVPILHSMVQKFPG VSFGISTDSEVLTHYNITGNTICLFRLVDNEQLNLEDEDIESI DATKLSRFIEINSL
146	885	1	156	DETSGLIVREVSIEISRQQVEELFGPEDYWCQCVAWSSAGTTK SRKAYVRIA
147	886	1	121	GTRSIHVKLDVGKLHTQPKLAAQLRMVDDGSGKVEGLPGI

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148	887	128	652	XCGEDGSFTQVQCHTYTGYCWCVTPDGKPISGSSVQNKTPVCS GSVTDKPLSQGNSGRKDDGSKPTPTMETQPVFDGDEITAPTLW IKHLVIKDSKLNNTNIRNSEKVYSCDQERQSALEEAQQNPREG IVIPECAPGGLYKPVQCHQSTGYCWCVLVDTGRPLPGTSTRYV MPSX*
149	888	128	273	VLQLIKSQKFLNKLVILVETEKEKILRKEYVFADSKVSDSKLL KWAVR
150	889	1	948	RRLSLLDLQLGPLGRDPPQECSTFSPTDSGEEPGQLSPGVQFQ RRQNQRRFSMEDVSKRLSLPMDIRLPQEFLQKLQMESPDLPKP LSRMSRRASLSDIGFGKLETYVKLDKLGEGTYATVFKGRSKLT ENLVALKEIRLEHEEGAPCTAIREVSLLKNLKHANIVTLHDLI HTDRSLTLVFEYLDSDLKQYLDHCGNLMSMHNVKVRPRGQGPP ILAATCPEAQCGDPLSPPGIRLLRWLKPSHVGKRERAMPSTSP GTGLSALPQEQTHTVCHCLAVGIKPTLNSEHQFPSLSNGSVSY LPKCREASGEARGYE
151	890	3	108	HERHEPSPTALAFGDHPIVQPKQLSFKIIQVNDN
152	891	2	208	ARGPSLLSEFHPGSDRPQERRTSYEPIHPGPSPVDHDSLESKR PRLEQASDSHYQGHITGESLPGRVH
153	892	1	116	GTRKEEFSAEENFLILTEMATNHVQVLVEFTKKLPGIF
154	893	74	661	HTHKLVAPRPGLPPTSQWPRDAGRQASGGLPSLSTGPPKGPRD GLARGHPAEWLAGSPGNNSPTQGSLPPQLDLYAGALFVHICLG WNFYLSTILTLGITALYTIAGMVPAAGRSTQGTCKGVRRPPPP TGPREQPRKWPQQEPQKFLPVSLLPGARAPSSNLASTGRGPGC CNLHGRPADAHHGGGGCHPDNQR
155	894	55	312	MVNHSLQETSEQNVILQHTLQQQQQMLQQETIRNGELEDTQTK LEKQVSKLEQELQKQRESSAEKLRKMEEKCESAAHEADLKRQK *
156	895	38	185	VCPKWCRFLTMLGHCCYFWHVWPAS*ALSAGPTPTSRSFSPSP LRSIST
157	896	37	462	MRGPPVLLLQAAPMECPVPQGIPAGSSPEPAPDPPGPHFLRQE RSFECRMCGKAFKRSSTLSTHLLIHSDTRPYPCQFCGKRFHQK SDMKKHTYIHTGEKPHKCQTQREPTMVLSPADKTNVKAAWX*
158	897	3	175	HEQLTNNTATAPSATPVFGQVAASTAPSLFGQQTGITASTAVA TPQVISSRFINLDF
159	898	187	677	VSVFKNCPMY*ICIFLTKMFCVLII*NKF*VHKKPLQEVEIA AITHGALQGLAYLHSHTMIHRDIKAGNILLTEPGQVKLADFGS ASMASPANSFVGTPYWMAPEVILAMDEGQYDGKVDVWSLGITC IELAERKPPLFNMNAMSALYHIAQNESPTLQSNEW

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
160	899	2	1060	RHARPGGGGHSNQRKMSLEQEEETQPGRLLGRRDAVPAFIEPN VRFWITERQSFIRRFLQWTELLDPTNVFISVESIENSRQLLCT NEDVSSPASADQRIQEAWKRSLATVHPDSSNLIPKLFRPAAFL PFMAPTVFLSMTPLKGIKSVILPQVFLCAYMAAFNSINGNRSY TCKPLERSLLMAGAVASSTFLGVIPQFVQMKYGLTGPWIKRLL PVIFLVQASGMNVYMSRSLESIKGIAVMDKEGNVLGHSRIAGT KAVRETLASRIVLFGTSALIPEVFTYFFKRTQYFRKNPGSLWI LKLSCTVLAMGLMVPFSFSIFPQIGQIQYCSLEEKIQSPTEET EIFYHRGV
161	900	3	564	HASGRLEVFYNGTWGSVGRRNITTAIAGIVCRQLGCGENGVVS LAPLSKTGSGFMWVDDIQCPKTHISIWQCLSAPWERRISSPAE ETWITCEDRIRVRGGDTECSGRVEIWHAGSWGTVCDDSWDLAE AEVVCQQLGCGSALAALRDASFGQGTGTIWLDDMRCKGNESFL WDCHAKPWGQSDCG
162	901	1099	2	LGDFPQPQRQRRPGASDLPPHLAGARQWEVRFFRHLPARTLPP SLRMPEGPELHLASQFVNEACRALVFGGCVEKSSVSRNPEVPF ESSAYRISASARGKELRLILSPLPGAQPQQEPLALVFRFGMSG SFQLVPREELPRHAHLRFYTAPPGPRLALCFVDIRRFGRWDLG GKWQPGRGPCVLQEYQQFRENVLRNLADKAFDRPICEALLDQR FFNGIGNYLRAEILYRLKIPPFEKARSVLEALQQHRPSPELTL SQKIRTKLQNPDLLELCHSVPKEVVQLGGRGYGSESGEEDFAA FRAWLRCYGMPGMSSLQDRHGRTIWFQGDPGPLAPKGRKSRKK KSKATQLSPEDRVEDALPPSK
163	902	3	335	LTWSACYWRDILRIQLWIAADILLRMLEKALLYSEHQNISNTG LSSQGLLIFAELIPAIKRTLARLLVIIASLDYGIEKPHLGTGM HRVIGLMLLYLIFANAESVIRVIG
164	903	2	135	FFFEMESRSAAQAGVQWCNLGSLQALPPRFTPFSCLSLPSSWD Y
165	904	74	645	YECEELAKKLENSQRDGISRNKLALAELYEDEVKCKSSKSNRP KATVFKSPRTPPQRFYSSEHEYSGLNIVRPSTGKIVNELFKEA REHGAVPLNEATRASGDDKSKSFTGGGYRLGSSFCKRSEYIYG ENQLQDVQILLKLWSNGFSLDDGELRPYNEPTNAQFLESVKRG VTLIACMPEIQQLMLEIF
166	905	14	1257	WPCGAAPGLTHASERMFTLTTMIQALAPVMGWDRKPLKMFSSE EMRGHLHHHHKCLTKILKVEGQVPDLPSCLPLTDNTRMLASIL INMLYDDLRCDPERDHFRKICEEYITGKFDPQDMDKNLNAIQT VSGILQGPFDLGNQLLGLKGVMEMMVALCGSERETDQLVAVEA LIHASTKLSRATFIITNGVSLLKQIYKTTKNEKIKIRTLVGLC KLGSAGGTDYGLRQFAEGSTEKLAKQCRKWLCNMSIDTRTRRW AVEGLAYLTLDADVKDDFVQDVPALQAMFELAKTSDKTILYSV ATTLVNCTNSYDVKEVIPELVQLAKFSKQHVPEEHPKDKKDFI DMRVKRLLKAGVISALACMVKADSAILTDQTKELLARVFLALC DNPKDRGTIVAQGGGKALIPLALEGTD

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167	906	3	894	VDSVGGGSESRSLDSPTSSPGAGTRQLVKASSTGTESSDDFEE RDPDLGDGLENGLGSPFGKWTLSSAAQTHQLRRLRGPAKCREC EAFMVSGTECEECFLTCHKRCLETLLILCGHRRLPARTPLFGV DFLQLPRDFPEEVPFVVTKCTAEIEHRALDVQGIYRVSGSRVR VERLCQAFENGRALVELSGNSPHDVSSVLKRFLQELTEPVIPF HLYDAFISLAKTLHADPGDDPGTPSPSPEVIRSLKTLLVQLPD SNYNTLRHLVAHLFRVAARFMENKMSANNLGIVFGPTL
168	907	1	394	GLHVISLHSADGRHWEDPLSELDSERVSAFLVTETLVFYLFCL LADETVVPPDVPSYLSSQGTLSDRQETVVRTEGGPQANGHIES NGKASVTVKQSSAVTVSLGAGGGLQVFTGQVPGIRWGKLGEAH AS
169	908	179	551	KIKHRPEEEPRWAAAGAQSAGPGAAEVAPPRPGTVAPGANGMT DSATANGDDRDPEIELFVKAGIDGESIGNCPFSQRLFMILWLK GVVFNVTTVDLKRKPADLRNLAPGTHPPFLAFNWYVKT
170	909	1	335	LGFSDGQEARPEEIGWLNGYNETTGERGDFPGTYVEYIGRKKI SPPTPKPRPPRPLPVAPGSSKTEADVEQQVLYKYRKKPSSSHR PQTPHNGKSKNFLHKQGLKKKKASL
171	910	1	895	RTRGVMELALRRSPVPRWLLLLPLLLGLNAGAVIDWPTEEGKE VWDYVTVRKDAYMFWWLYYATNSCKNFSELPLVMWLQGGPGGS STGFGNFEEIGPLDSDLKPRKTTWLQAASLLFVDNPVGTGFSY VNGSGAYAKDLAMVASDMMGLLKTFFSCHKEFQTVPFYIFSES YGGKMAAGIGLELYKAIQRGTIKCNFAGVALGDSWISPVDSVL SWGPYLYSMSLLEDKGLAEVSKVAEQVLNAVNKGLYREATELW GKAEMIIEQVKRGNTQRRACLAFSGGYRAHGWCCQTWSLH
172	911	553	194	PGWSRSPDLVIRLPRPPKVLGLQYYHFFFFLRWSL/DSVAQAE VQWHDLRSLQAPPPGFTPFSCLSLPGSWDYRCPPPRPANFLYF **RRGFTVLARMVSIS*PRDPPASASQSAGITVLSLFFFFEME SCSVAQAGVQWRYLGSLQALPPGFTPFSCLSLPSSWDYRRPPP RPANFFVFLVETGVSPC*PGWSRSPDLVIRLPQPPKVLGLQV
173	912	1761	1	PSMKTGELEKETAPLRKDADSSISVLEIHSQKAQIEEPDPPEM ETSLDSSEMAKDLSSKTALSSTESCTMKGEEKSPKTKKDKRPP ILECLEKLEKSKKTFLDKDAQRLSPIPEEVPKSTLESEKPGSP EAAETSPPSNIIDHCEKLASEKEVVECQSTSTVGGQSVKKVDL ETLKEDSEFTKVEMDNLDNAQTSGIEEPSETKGSMQKSKFKYK LVPEEETTASENTEITSERQKEGIKLTIRISSRKKKPDSPPKV LEPENKQEKTEKEEEKTNVGRTLRRSPRISRPTAKVAEIRDQK ADKKRGEGEDEVEEESTALQKTDKKEILKKSEKDTNSKVSKVK PKGKVRWTGSRTRGRWKYSSNDESEGSGSEKSSAASEEEEEKE SEEAILADDDEPCKKCGLPNHPELILLCDSCDSGYHTALPFAP PLMIHPQMGGW\F\CPTFCPTLNLLLLEKLEDQF\QDL\DVAL KKERALPERRK\ERLVYVGI\SIENIIPPQ\EPDFSEDQEEKK KDSKKSKANLL\ERRSTRTRKCISYRFDEFDEAIDEAIEDDIK EADGGGVGRGKDISTITGHRGKDISTILDEER

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174	913	3	539	KRRGSFKMAELDQLPDESSSAKALVSLKEGSLSNTWNEKYSSL QKTPVWKGRNTSSAVEMPFRNSKRSRLFSDEDDRQINTRSPKR NQRVAMVPQKFTATMSTPDKKASQKIGFRLRNLLKLPKAHKWC IYEWFYSNIDKPLFEGDNDFCVCLKESFPNLKTRKLTRVEWGK IRRLMG
175	914	166	635	MPEYLRKRFGGIRIPIILAVLYLFIYIFTKISVDMYAGAIFIQ QSLHLDLYLAIVGLLAITAVYTVAGGLAAVIYTDALQTLIMLI GALTLMGYSFAAVGGMEGLKEKYFLALASNRSENSSCGLPRED AFHIFRDPLTSDLPWPGVLFGMSIPSLX*
176	915	673	1025	XSASATSLTLSHCVDVVKGLLDFKKRRGHSIGGAPEQRYQIIP VMCCSLLATGGADRLIHLWNVVGSRLEANQTLEGAGGSITSVD FDPSGYQVLAATYNQVAQFWK*
177	916	3	139	QKRFPSNCGRDGKLFLWGQALHIIAKLLGKWRRLGMVFFSLLL SY
178	917	1	541	VHVCSSKMGALSTERLQYYTQELGVRERSGHSVSLIDLWGLLV EYLLYQEENPAKLSDQQEAVRQGQNPYPIYTSVNVRTNLSGED FAEWCEFTPYEVGFPKYGAYVPTELFGSELFMGRLLQLQPEPR ICYLQGMWGSAFATSLDEIFLKTAGSGLSFLEWYRGSVNITDD CQKPQLHN
179	918	1	628	EFLGRPTRPAKDEGNDEGKDEGKDEGKDEGKDEGKDEGKDERK DEGKDEGKDERKDEGKDEGKDEGKDEGKDEGKDEGKDEGKDEG NDEGKDEGKDEGKDEGKDEGKDEGKDERKDEGKDEGKDERKDE GKDEGKDEGKDEGKDEGKDEGKDEGKDEGNDEGKDEGKDEGKD EGKDEGKDEGKDEGNDEGNDEGNDEGKDEGKDERNDEGKDEGK DEGKDEGKDERNDEGKDERKDEGKDEGKDEGKDEGKDEGKDEG NDEGKDERKDEGKDEGKDEGKDK
180	919	27	471	PSLRPAWHEGEDFSYGLQPYCGYSFQVVGEMIRNREVLPCPDD CPAWAYALMIEGWNEFPSRRARFKDIHSRLRAWGNLSNYNSSE QTSGGRNTTQTSSLSTSPLCNVSNAPYVGPKQKVPPFPQTQVI PMKGQIRPMVPPPQLYVP
181	920	2	454	RNSGRHPRVRWILEERKRVMQEACAKYRASSSRRAVTPRHVSR IFVEDRHRVLYCEVPKAGCSNWKRVLMVLAGLASSTADIQHNT VHYGSALKRLDTFDRQGILHRLSTYTKMLFVREPFERLVSAFR DKFEHPNSYYHPVFCMAILAR
182	921	2	378	IMYSISPANSEEGQELYVCTVKDDVNLDTVLLLPFLKEIAVSQ LDQLSPEEQLLVKCAAIIGHSFHIDLLQHLLPGWDKNKLLQVL RALVDIHVLCWSDKSQELPAEPILMPSSIDIIDGTKEKK
183	922	181	513	GPHVVLVLRRCFLLSYFKGVEKAKAMPSPRILKTHLSTQLLPP SFWENNCKVRYQQLPVTEGKVSQPKRVLQTPTQSIRDHLCLST VSDAYQQRENIKFYIQQDIHLNSFK
184	923	32	239	FYYICRLSKEDKAFLWEKRYYCFKHPNCLPKILASAPNWKWVN LAKTYSLLHQWPALYPLIALELLDSK

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185	924	3	361	KMMI*GLFEIQQCPIGKHCNFLQVLRN/PNRDL/WLVSSFGKS SKGRERMGHHDEYYRLRGR/HNPSPDHSYKRNGESERKRKKSH ·*HMSKSQERHNSPSRGRNSDRSGGRCSRSDNGRSRYR
186	925	443	1412	PLSLFARVAGSRVEMPEPPGLGDEGRPLLHPGRREAVGSWVSA FAGDSTPCGPGDLSVPRREPFRLTAL*PHRSPVVRTSLIGLLL GFSVKEELRGVGWAARTPLGIR
187	926	2	917	FDKRQHEARIQQMENEIHYLQENLKSMEEIQGLTDLQLQEADE EKERILAQLRELEKKKKLEDAKSQEQVFGLDKELKKLKKAVAT SDKLATAELTIAKDQLKSLHGTVMKINQERAEELQEAERFSRK AAQAARDLTRAEAEIELLQNLLRQKGEQFRLEMEKTGVGTGAN SQVLEIEKLNETMERQRTEIARLQNVLYLTGSDNKGGFENVLE EIAELRREGSYQNDYISSMADPFKRRGYWYFMPPPPSSKVSSH SSQATKDSGVGLKYSASTPVRKPRPGQQDGKEGSQPPPASGYW VYSP
188	927	171	1082	SDASSFKTRVIVVPRPRVFPLGSAITENSLESDSQIGQFGVGF YSAFLVADKVIVTSKHNNDTQHIWESDSNEFSVIADPRGNTLG RGTTITLVLKEEASDYLELDTIKNLVKKYSQFINFPIYVWSSK TETVEEPMEEEEAAKEEKEESDDEAAVEEEEEEKKPKTKKVEK TVWDWELMNDIKPIWQRPSKEVEEDEYKAFYKSFSKESDDPMA YIHFTAEGEVTFKSILFVPTSAPRGLFDEYGSKKSDYIKLYVR RVFITDDFHDMMPKYLNFVKGVVDSDDLPLNVSRETLQQHKLL KV
189	928	718	275	CGSWMRRALIPPCRGGPSASDRCCSCSPSGFSAGRGRCPVQGC LRPHRVQLLRRWGPGSPAGQRLSKGFQLLRWWGPGSPAPEPRK GPFPPPDPPWPVTAVTVMAGSVPSAQSVDALESPGPLALEGPS SPRNLLWREMSIFLPGIF
190	929	1	550	PGPTPPPRHGSPPHRLIRVETPGPPAPPADERISGPPASSDRL AILEDYADPFDVQETGEGSAGASGAPEKVPENDGYMEPYEAQK MMAEIRGSKETATQPLPLYDTPYEPEEDGATPEGEGAPWPRES RLPEDDERPPEEYDQPWEWKKERISKAFAVDIKVIKDLPWPPP VGQLDSSPSLP
191	930	1	562	QFFSLFLRYQIHTGLQHSIIRPTQPNCLPLDNATLPQKLKEVG YSTHMVGKWHLGFYRKECMPTRRGFDTFFGSLLGSGDYYTHYK CDSPGMCGYDLYENDNAAWDYDNGIYSTQMYTQRVQQILASHN PTKPIFLYIAYQAVHSPLQAPGRYFEHYRSIININRRRYAAML SCLDEAINNVTLALK
192	931	3	580	RVRKGRGGERLQSPLRVPQKPERPPLPPKPQFLNSGAYPQKPL RNQGVVRTLSSSAQEDIIRWFKEEQLPLRAGYQKTSDTIAPWF HGILTLKKANELLLSTGMPGSFLIRVSERIKGYALSYLSEDGC KHFLIDASADAYSFLGVDQLQHATLADLVEYHKEEPITSLGKE LLLYPCGQQDQLPDYLELFE

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193	932	3	1641	GSLEKALFQLLKVWGQWAEQTRRLQRLDVSLSVARVRSAGPSC QNKGDLVMEALLEGIQNRGHGGGFLTSCEAELQELMKQIDIMV AHKKSEWEGRTHALETCLKIREQELKSLRSQLDVTHKEVGMLH QQVEEHEKIKQEMTMEYKQELKKLHEELCILKRSYEKLQKKQM REFRGNTKNHREDRSEIERLTAKIEEFRQKSLDWEKQRLIYQQ QVSSLEAQRKALAEQSEIIQAQLVNRKQKLESVELSSQSEIQH LSSKLERANDTICANELEIERLTMRVNDLVGTSMTVLQEQQQK EEKLRESEKLLEALQEEKRELKAALQSQENLIHEARIQKEKLQ EKVKATNTQHAVEAISLESVSATCKQLSQELMEKYEELKRMEA HNNEYKAEIKKLKEQILQGEQSYSSALEGMKMEISHLTQELHQ RDITIASTKGSSSDMEKRLRAEMQKAEDKAVEHKEILDQLESL KLENRHLSEMVMKLELGLHECSLPVSPLGSIATRFLEEEELRS HHILERLDAHIEELKRESEKTVRQFTALK
194	933	159	1053	TGFLGWSQGPSLTPTSLSALYPSQVEETGVVLSLEQTEQHSRR PIQRGAPSQKDTPNPGDSLDTPGPRILAFLHPPSLSEAALAAD PRRFCSPDLRRLLGPILDGASVAATPSTPLATRHPQSPLSADL PDELPVGTENVHRLFTSGKDTEAVETDLDIAQDADALDLEMLA PYISMDDDFQLNASEQLPRAYHRPLGAVPRPRARSFHGLSPPA LEPSLLPRWGSDPRLSCSSPSRGDPSASSPMAGARKRTLAQSS KDEDEGVELLGVRPPKRSPSPEHENFLLFPLSLSFLLTG
195	934	3	425	ELQDCFDVHDASWEEQIFWGWHNDVHIFDTKTQTWFQPEIKGG VPPQPRAAHTCAVLGNKGYIFGGRVLQTRMNDLHYLNLDTWTW SGRITINGESPKHRSWHTLTPIADDKLFLCGGLNAYNMPLSDG WIHNVTTHCWK
196	935	2	295	FFFLRTRSHSVTPRWECSDDITAHWQPQPWGSSDPLTFS/RPQ VVVPPRHTTLCP\ANFFVFCIFCRNRISPCWPGWSRTPWAQLI RLPRPPKVLGLQV
197	936	2	737	PREGQVKQGLLGDCWFLCACAALQKSRHLLDQVIPPGQPSWAD QEYRGSFTCRIWQFGRWVEVTTDDRLPCLAGRLCFSRCQREDV FWLPLLEKVYAKVHGSYEHLWAGQVADALVDLTGGLAERWNLK GVAGSGGQQDRPGRWEHRTCRQLLHLKDQCLISCCVLSPRAGE ARGQHGRAAASVPPTARPQAHCSFLCDWLHSPVRTKWEEVSLF SRVVSSVCDLPLLSSSRGTWPFSPLTSPFH
198	937	3	638	AECLEASIARYAHRVANSRYTFDGETVTLSPSQGVNQLHGGPE GFDKRRWQIVNQNDRQVLFALSSDDGDQGFPGNLGATVQYRLT DDNRISITYRATVDKPCPVNMTNHVYFNLDGEQSDVRNHKLQI LADEYLPVDEGGIPHDGLKSVAGTSFDFRSAKIIASEFLADDD QRKVKGYDHAFLLQAKGDGKKVAAHVWSADEKLQLKVYT
199	938	69	425	PLSRFLSKESQEDWGMERQSRVMSEKDEYQFQHQGAVELLVFN FLLILTILTIWLFKNHRFRFLHETGGAMVYDKPPKFAMSREQM SQSCSHTAHNASLLTDAGPLSCGESRASCLFL

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200	939	3	435	DSKEPRLQQLGLLEEEQLRGLGFRQTRGYKSLAGCLGHGPLVL QLLSFTLLAGLLVQVSKVPSSISQEQSRQDAIYQNLTQLKAAV GELSEKSKLQEIYQELTQLKAAVGELPEKSKLQEIYQELTWLK AAVGELPEKSKMQE
201	940	657	469	MQSIAWGHRRDRGESPLGWGQESEASPSALTEAPKAAHTTRLG FLAANNPNGHSQPQDSFLL*
202	941	1	714	FETLSMRGIPHMLALGPQQLLAQDEEGDTLLHLFAARGLRWAA YAAAEVLQVYRRLDIREHKGKTPLLVAAAANQPLIVEDLLNLG AEPNAADHQGRSVLHVAATYGLPGVLLAVLNSGVQVDLEARDF EGLTPLHTAILALNVAMRPSDLCPRVLSTQARDRLDCVHMLLQ MGANHTIQVSGDVGGQTLGDCVEWGHLDVRELQANADFASSLL RALEHVTSLLCALRVFCLFLCQL
203	942	3	479	DAWADAWVGTKMADLDSPPKLSGVQQPSEGVGGGRCSEISAEL IRSLTELQELEAVYERLCGEEKVVERELDALLEQQNTIESKMV TLHRMGPNLQLIEGDAKQLAGMITFTCNLAENVSSKVRQLDLA KNRLYQAIQRADDILDLKFCMDGVQTALR
204	943	1	706	AVEFRVPRSGSAYLYSYVTVGELWAFTTGWNLILSYVIGTASV ARAWSSAFDNLIGNHISKTLQGSIALHVPHVLAEYPDFFALGL VLLLTGLLALGASESALVTKVFTGVNLLVLGFVMISGFVKGDV HNWKLTEEDYELAMAELNDTYSLGPLGSGGFVPFGFEGILRGA ATCFYAFVGFDCIATTGEEAQNPQRSIPMGIGISLSVCFLADF AVSSALTLMMPYYQLQPESP
205	944	1	852	GFHPNTTHYRARAAARAGAGSFVGEVSAVDKDFGPNGEVRYSF EMVQPDFELHAISGEITNTHQFDRESLMRRRGTAVFSFTVIAT DQGIPQPLKDQATVHVYMKDINDNAPKFLKDFYQATISESAAN LTQVLRVSASDVDEGNNGLIHYSIIKGNEERQFAIDSTSGQVT LIGKLDYEATPAYSLVIQAVDSGTIPLNSTCTLNIDILDENDN TPFF/LLNQHFFVDVLENMRIGELGASGTATDS\DSGDIADLY YKFTGTKHPPGTFSISPKHLGVFFLAQK
206	945	3	363	GDCYDLYGGEKFATLAELVQYYMEHHGQLKEKNGDVIELKNPL NCADPTSQRWFHGHLSGKEAEKLLTEKGKHSSFLVRESQSHPG DFVLSVCTGDDKGESNDGKSKVTHVMIHCQELK
207	946	218	717	IDSGNQNGGNDDKTKNAERNYLNVLPGEFYITRHSNLSEIHVA FHLCVDDHVKSGNITARDPAIMGLRNILKVCCTHDITTISIPL LLVHDMSEEMTIPWCLRRAELVFKCVKGFMMEMASWDGGISRT VQFLVPQSISEEMFYQLSNMLPQIFRVSSTLTLTSKH
208	947	3	368	SILPALLVTILIFMDQQITAVIVNRKENKLKKAAGYHLDLFWV GILMALCSFMGLPWYVAATVISIAHIDSLKMETETSAPGEQPQ FLGVREQRVTGIIVFILTGISVFLAPILKCIPLPV
209	948	2	575	GASRVEAGSANGMLIDGGSQIVKVQGHADGTTINKSGSQDVVQ GSLATNTTINGGRQYVEQSTVETTTIKNGGEQRVYESRALDTT IEGGTQSLNSKSTAKNTHIYSGGTQIVDNTSTSDVIEVYSGGV LDVRGGTATNVTQHDGAILKTNTNGTTVSGTNSEGAFSIHNHV ADNVLLENGGHLDINAYGS

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210	949	1	296	FFSSIQLTDDQGPVLMTTVAMPVFSKQNETRSKGILLGVVGTD VPVKELLKTIPKYKVMNDLIPEIKATEMPRALFSQSSGFKLYF GAMFLLTTITAC
211	950	3	594	SCSGTGTNACYMEDMSNIDLVEGDEGRMCINTEWGAFGDDGAL EDIRTEFDRELDLGSLNPGKQLFEKMISGLYLGELVRLILLKM AKAGLLFGGEKSSALHTKGKIETRHVAAMEKYKEGLANTREIL VDLGLEPSEADCIAVQHVCTIVSFRSANLCAAALAAILTRLRE NKKVERLRTTVGMDGTLYKIHPQY
212	951	2	2167	FVAIATNGVVPAGGSYYMISRSLGPEFGGAVGLCFYLGTTFAG AMYILGTIEILLAYLFPAMAIFKAEDASGEAAAMLNNMRVYGT CVLTCMATVVFVGVKYVNKFALVFLGCVILSILAIYAGVIKSA FDPPNFPICLLGNRTLSRHGFDVCAKLAWEGNETVTTRLWGLF CSSRFLNATCDEYFTRNNVTEIQGIPGAASGLIKENLWSSYLT KGVIVERSGMTSVGLADGTPIDMDHPYVFSDMTSYFTLLVGIY FPSVTGIMAGSNRSGDLRDAQKSIPTGTILAIATTSAVYISSV VLFGACIEGVVLRDKFGEAVNGNLVVGTLAWPSPWVIVIGSFF STCGAGLQSLTGAPRLLQAISRDGIVPFLQVFGHGKANGEPTW ALLLTACICEIGILIASLDEVAPILSMFFLMCYMFVNLACAVQ TLLRTPNWRPRFRYYHWTLSFLGMSLCLALMFICSWYYALVAM LIAGLIYKYIEYRGAKKEWGDGIRGLSLSAARYALLRLEEGPP HTKNWRPQLLVLVRVDQDQNVVHPQLLSLTSQLKAGKGLTIVG SVLEGTFLENHPQAQRAEESIRRLMEAEKVKGFCQVVISSNLR DGVSHLIQSGGLGGLQHNTVLVGWPRNWRQKEDHQTWRNFIEL VRETTAGHLALLVTKNVSMFPGNPERFSEGSIDRWGIGHDGGM LMLVPFLLRHHKVWRKCKMRIFTVAQMVDMHAM
213	952	1	128	FYLRLLSFFCFQEHEKRCWSVDFNLMDPKLLASGSDDAKGTV
214	953	3	244	RNSKAMHRSSCDGPLLSLPSVGRSATHALVQAQLICSGARRGM HAFIVPIRSLQDHTPLPGKPIMLPQGTLPGGEPRWPP
215	954	2	609	CGTLILQARAYVGPHVLAVVTRTGFCTAKGGLVSSILHPRPIN FKFYKHSMKFVAALSVLALLGTIYSIFILYRNRVPLNEIVIRA LDLVTVVVPPALPAAMTVCTLYAQSRLRRQGIFCIHPLRINLG GKLQLVCFDKTGTLTEDGLDVMGVVPLKGQAFLPLVPEPRRLP VGPLLRALATCHALSRLQDTPVGDPMDLKM
216	955	292	855	QIEYFRSLLDEHHISYVIDEDVKSGRYMELEQRYMDLAENARF EREQLLGVQQHLSNTLKMAEQDNKEAQEMIGALKERSHHMERI IESEQKGKAALAATLEEYKATVASDQIEMNRLKAQLENEKQKV AELYSIHNSGDKSDIQDLLESVRLDKEKAETLASSLQEDLAHT RNDANRLQDAIAKGRG
217	956	2	400	ARYRFTLSARTQVGSGEAVTEESPAPPNEATPTAAPPTLPPTT VGATGAVSSTDATAIAATTEATTVPIIPTVAPTTMATTTTVAT TTTTTAAATTTTESPPPTTTSGTKIHESAPDEQSIWNVTVLPNS KWA

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218	957	1	662	LKSTQDEINQARSKLSQLHESRQEAHRSLEQYDQVLDGAHGAS LTDLANLSEGVSLAERGSFGAMDDPFKNKALLFSNNTQELHPD PFQTEDPFKSDPFKGADPFKGDPFQNDPFAEQQTTSTDPFGGD PFKESDPFRGSATDDFFKKQTKNDPFTSDPFTKNPSLPSKLDP FESSDPFSSSSVSSKGSDPFGTLDPFGSGSFNSAEGFADFSTI EGRRG
219	958	1	752	RTRGGSGNSSQPSLREGHDKPVFNGAGKPHSSTSSPSVPKTSA SRTQKSAVEHKAKKSLSHPSHSRPGPMVTPHNKAKSPGVRQPG SSSSSAPGQPSTGVARPTVSSGPVPRRQNGSSSSGPERSISGS KKPTNDSNPSRRTVSGTCGPGQPASSSGGPGRPISGSVSSARP LGSSRGPGRPVSSPHELRRPVSGLGPPGRSVSGPGRSISGSIP AGRTVSNSVPGRPVSSLGPGQTVSSSGPTIKPKCT
220	959	439	582	RGKGITPRYHLCISDPHNLKICCRVNGEVVQSSNTNQMVFKTE DLIAW
221	960	230	420	VVAVTRWLCENGVSYLRKCVCSACRHGTRCAGEVAAAANNSHC TVGIAFNAKIGGMGNQLTWM
222	961	311	490	GAPPPFVPTLKSDDDTSNFDEPKKNSWVSSSPCQLSPSGFSGE ELPFVGFSYSKALGIL
223	962	2	422	FVERLAHLHAACAPRRKVALLLEVCRDVYAGLARGENQDPLGA DAFLPALTEELIWSPDIGDTQLDVEFLMELLDPDELRGEAGYY LTTWFGALHHIAHYQPETDRAPRGLSSEARASLHQWHRRRTLH RKDHPRAQQLD
224	963	385	844	FWMDPYNPLNFKAPFQTSGENEKGCRDSKTPSESIVAISECHT LLSCKVQLLGSQESECPDSVQRDVLSGGRHTHVKRKKVTFLEE VTEYYISGDEDRKGPWEEFARDGCRFQKRIQETEDAIGYCLTF EHRERMFNRLQGTCFKGLNVLKQC
225	964	3	166	AASTAYSFFGTVENMAPKVVNRPGHTQSADWGSFGGLMGRFEF GIFLKGKEIVK
226	965	1	118	GFVFLPGPMSVGLDFSLPGMEHVYGIPEHADNLRLKVTE
227	966	1	390	GSECQGTDLDTRNCTSDLCVHTASGPEDVALYVGLIAVAVCLV LLLLVLILVYCRKKEGLDSDVADSSILTSGFQPVSIKPSKADN PHLLTIQPDLSTTTTTYQGSLCPRQDGPSPKFQLTNGHLLSPL G
228	967	1	777	LIYNEDMICWIESRESSNQLKCIQITKAGGLTDEWTINILQSF HNVQQMAIDWLTRNLYFVDHVGDRIFVCNSNGSVCVTLIDLEL HNPKAIAVDPIAGKLFFTDYGNVAKVERCDMDGMNRTRIIDSK TEQPAALALDLVNKLVYWVDLYLDYVGVVDYQGKNRHAVIQGR QVRHLYGITVFEDYLYATNSDSYNIVRISRFNGTDIHSLIKIE NAWGIRIYQKRTQPTVRSHACEVDPYGMPGGCSHICLLSSSYT K
229	968	3	488	SSGNPQPGDSSGGGAGGGLPSPGEQELSRRLQRLYPAVNQQET PLPRSWSPKDKYNYIGLSQGNLRVHYKGHGKNHKDAASVRATH PIPAACGIYYFEVKIVSKGRDGYMGIGLSAQGVNMNRLPGWDK HSYGYHGDDGHSFCSSGTGQPYGPTFTTGDVI

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230	969	1	228	FFFFKMGSRSVTQAGVQWCDVSSLQAPPPRFTLFCLSLPSSWD YRCVPPCPANFFVFLVETGFHRVSQYGLDLLTS
231	970	2	119	QLSLARGKVFLCALSFVYFAKALAEGYLKSTITQIERRVDIPS SLVGVIDGSFEIGNLLVITFVSYFGAKLHRPKIIGAGCVIMGV GTLLIAMPQFFMEQYKYERYSPSSNSTLSISPCLLESSSQLPV SVMEKSKSKISNECEVDTSSSMWIYVFLGNLLRGIGETPIQPL GIAYLDDFASEDNAAFYIGCVQTVAIIGPIFGFLLGSLCAKLY VDIGFVNL/DHF*VSAQLGTRKGVLVCLVFCLLCQSIGRRLSE EHHHSDREKG
232	971	221	1068	QPAGRVEAFCKFHMWAEGMTSLMKAALDLTYPITSMFSGAGFN SSIFSVFKDQQIEDLWIPYFAITTDITASAMRVHTDGSLWRYV RASMSLSGYMPPLCDPKDGHLLMDGGYINNLPADVARSMGAKV VIAIDVGSRDETDLTNYGDALSGWWLLWKRWNPLATKVKVLNM AEIQTRLAYVCCVRQLEVVKSSDYCEYLRPPIDSYSTLDFGKF NEICEVGYQHGRTVFDIWGRSGVLEKMLRDQQGPSKKPASAVL TCPNASFTDLAEIVSRIEPAKPAM
233	972	133	635	LWVIMFVSYLILTLLHVQTAVLARPGGESIGCDDYLGSDKVVD KCGVCGGDNTGCQVVSGVFKHALTSLGYHRVVEIPEGATKINI TEMYKSNNYLALRSRSGRSIINGNWAIDRPGKYEGGGTMFTYK RPNEISSTAGESFLAEGPTNEILDVYVSLDVSGLFFGF
234	973	1	420	ISGGTRSAGPLRRNYNFIAAVVEKVAPSVVHVQLWGRNQQWIE VVLQNGARYEAVVKDIDLKLDLAVIKIESNAELPVLMLGRSSD LRAGEFVVALGSPFSLQNTATAGIVSTKQRGGKELGMKDSDMD YVQIDATINYG
235	974	2	860	PRVRELKEILDRKGHFSENETRWIIQSLASAIAYLHNNDIVHR DLKLENIMVKSSLIDDNNEINLNIKVTDFGLAVKKQSRSEAML QATCGTPIYMAPEVISAHDYSQQCDIWSIGVVMYMLLRGEPPF LASSEEKLFELIRKGELHFENAVWNSISDCAKSVLKQLMKVDP AHRITAKELLDNQWLTGNKLSSVRPTNVLEMMKEWKNNPESVE ENTTEEKNKPSTEEKLKSYQPWGNVPETNYTSDEEEEKQVGRI IAAFLPSVKYPHHTWNIFLQICLFVVSL
236	975	1	467 /	LSISVSDVSLSDEGQYTCSLFTMPVKTSKAYLTVLGVPEKPQI SGFSSPVMEGDLMQLTCKTSGSKPAADIRWFKNDKEIKDVKYL KEEDANRKTFTVSSTLDFRVDRSDDGVAVICRVDHESLNATPQ VAMQVLEMHYTPSVKIIPSTPFPQEG
237	976	3	417	YNQKVDLFSLGIIFFEMSYHPMVTASERIFVLNQLRDPTSPKF PEDFDDGEHAKQKSVISWLLNHDPAKRPTATELLKSELLPPPQ MEESELHEVLHHTLTNVDGKAYRTIDGPRSFRQRISPAIA\YT YD\SDILKGN

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238	977	2	740	DQDYKYDSTSDDSNFLNPPRGWDHTAPGHRTFETKDQPEYDST DGEGDWSLWSVCSVTCGNGNQKRTRSCGYACTATESRTCDRPN CPGIEDTFRTAATEVSLLAGSEEFNATKLFEVDTDSCERWMSC KSEFLKKYMHKVMNDLPSCPCSYPTEVAYSTADIFDRIKRKDF RWKDASGPKEKLEIYKPTARYCIRSMLSLESTTLAAQHCCYGD NMQLITRGKGAGTPNLISTEFSAELHYKVDV
239	978	2	612	ESEENGESAMDSTVAKEGTNVPLVAAGPCDDEGIVTSTGAKEE DEEGEDVVTSTGRGNEIGHASTCTGLGEESEGVLICESAEGDS QIGTVVEHVEAEAGAAIMNANENNVDSMSGTEKGSKDTDICSS AKGIVESSVTSAVSGKDEVTPVPGGCEGPMTSAASDQSDSQLE KVEDTTISTGLVGGSYDVLVSGEVPECEVAH
240	979	79	361	VCIICLIFSYYSFDSALQSAKSSLGGNDELSATFLEMKGHFYM YAGSLLLKMGQHGNNVQWRALSELAALCYLIAFQVSLPLGAID ISRSLDVF
241	980	2	681	QHPSQEKPQVLTPSPRKQKLNRKYRSHHDQMICKCLSLSISYS ATIGGLTTIIGTSTSLIFLEHFNNQYPASEVVNFGTWFLFSFP ISLIMLVVSWFWMHWLFLGCNFKETCSLSKKKKTKREQLSEKR IQEEYEKLGDISYPEMVTGFFFILMTVLWFTREPGFVPGWDSF FEKKGYRTDATVSVFLGFLLFLIPAKKPCFGKKNDGENQEHSL GTEPIITWKDF
242	981	1	491	LEREGDKGTPVLRGFSSVSGSWSRRMPPFLLLTCLFITGTSVS PVALDPCSAYISLNEPWRNTDHQLDESQGPPLCDNHVNGEWYH FTGMAGDAMPTFCIPENHCGTHAPVWLNGSHPLEGDGIVQRQA CASFNGNCCLWNTTVEVKACPGGYYVYRLTKPSV
243	982	1	983	CGRTMSDIRHSLLRRDALSAAKEVLYHLDIYFSSQLQSAPLPI VDKGPVELLEEFVFQVPKERSAQPKRLNSLQELQLLEIMCNYF QEQTKDSVRQIIFSSLFSPQGNKADDSRMSLLGKLVSMAVAVC RIPVLECAASWLQRTPVVYCVRLAKALVDDYCCLVPGSIQTLK QIFSASPRFCCQFITSVTALYDLSSDDLIPPMDLLEMIVTWIF EDPRLILITFLNTPIAANLPIGFLELTPLVGLIRWCVKAPLAY KRKKKPPLSNGHVSNKVTKDPGVGMDRDSHLLYSKLHLSVLQV LMTLQLHLTEKNLYGPPGADPLRPHG
244	983	32	362	SACSTGPELPGRATRSLTRPANQKGCDGDRLYYDGCAMIAMNG SVFAQGSQFSLDDVEVLTATLDLEDVRSYRAEISSRNLAVSAP VDTCVGCSSKTWKVAPFVRAWWRP
245	984	158	398	APLSRLCFPQVLVNEGGGFDRASGSFVAPVRGVYSFRFHVVKV YNRQTVQVTSALAPIPGSGGWGGGRRGAQLTSGWTLH
246	985	2	707	PHIIGAEDDDFGTEHEQINGQCSCFQSIELLKSRPAHLAVFLR HVVSQFDPATLLCYLYSDLYKHTNSKETRRIFLEFHQFFLDRS AHLKVSVPDEMSADLEKRRPELIPEDLHRHYIQTMQERVHPEV QRHLEDFRQKRSMGLTLAESELTKLDAERDKDRLTLEKERTCA EQIVAKIEEVLMTAQAVEEDKSSTMQYVILMYMKHLGVKVKEP RNLEHKRGRIGFLPKIKQSM

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247	986	18	441	SPGTGRGPGPTSFVCLPTPQCPFIDDFILALHRKIKNEPVVFP EGPEISEELKDLILKMLDKNPETRIGVPDIKLHPWVTKNGEEP LPSEEEHCSVVEVTEEEVKNSVRLIPSWTTVILVKSMLRKRSF GNPFEPQARMA
248	987	3	732	HASGIKIDKTSDGPKLFLTEEDQKKLHDFEEQCVEMYFNEKDD KFHSGSEERIRVTFERVEQMCIQIKEVGDRVNYIKRSLQSLDS QIGHLQDLSALTVDTLKTLTAQKASEASKVHNEITRELSISKH LAQNLIDDGPVRPSVWKKHGVVNTLSSSLPQGDLESNNPFHCN ILMKDDKDPQCNIFGQDLPAVPQRKEFNFPEAGSSSGALFPSA VSPPELRQRLHGVELLKIFNKKQKKRA
249	988	3	468	CCRWIDCFALYDQQEELVRHIEKVHIDQRKGEDFTCFWAGCPR RYKPFNARYKLLIHMRVHSGEKPNKCTFEGCEKAFSRLENLKI HLRSHTGEKPYLCQHPGCQKAFSNSSDRAKHQRTHLDTKPYAC QIPGCTKRYTDPSSLRKHVKAHSSK
250	989	356	553	LPLLWTLSDFGGTMDQSGMEIPVTLIIKAPNQKYSDQTISCFL NWTVGKLKTHLSNVYPSKPVSV
251	990	1	895	AGTRMCVVAAAEELVCGA\RGLWMRRTRRPRFVLMNKMDDLNL HYRFLNWRRRIREIREVRAFRYQERFKHILVDGDTLSYHGNSG EVGCYVASRPLTKDSNYFEVSIVDSGVRGTIAVGLVPQYYSLD HQPGWLPDSVAYHADDGKLYNGRAKGRQFGSKCNSGDRIGCGI EPVSFDVQTAQIFFTKNGKRVGSTIMPMSPDGLFPAVGMHSLG EEVRLHLNAELGREDDSVMMVDSYEDEWGRLHDVRVCGTLLEY LGKGKSIVDVGLAQARHPLSTRSHYFEVEIVDPGEKCYIA
252	991	51	674	QQAEEHLAAYSVSDSDSGKDPSMECCRRATPGTLLLFLAFLLL SSRTARSEEDRDGLWDAWGPWSECSRTCGGGASYSLRRCLSSK SCEGRNIRYRTCSNVDCPPEAGDFRAQQCSAHNDVKHHGQFYE WLPVSNDPDNPCSLKCQAKGTTLVVELAPKVLDGTRCYTESLD MCISGLCQVSADLFSFNLSRGFQCLCVNGLHSLTL
253	992	2	554	RLLRQELVVLCHLHHPSLISLLAAGIRPRMLVMELASKGSLDR LLQQDKASLTRTLQHRIALHVADGLRYLHSAMIIYRDLKPHNV LLFTLYPNAAIIAKIADYGIAQYCCRMGIKTSEGTPGFRAPEV ARGNVIYNQQADVYSFGLLLYDILTTGGRIVEGLKFPNEFDEL EIQGKLPDPVKE
254	993	3	437	KASNSTHEFRIGLPEGWESEKKAVIPLGIGPPLTLICLGVLGG ILIYGRKGFQTAHFYLKDSPSPKVISTPPPPIFPISKEVGPIP IKHFPKHVANLHASRGFTEKFETLKKFYQEGQSCTVDLGITAN SSNHPDNRHRNRSLI
255	994	3	445	SFPDRTASLVLLSVPVGQAGMQQRGLAIVALAVCAALHASPAI LPIASSCCTEVSHHISRRLLERVNMCRIQRADGDCDLAAVILH VKRRRICVSPHNHTVKQWMKVQAAKKNGKGNVCHRKKHHGKRN SNRAHQGKHETYGHKTPY

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine; C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
256	995	2	737	FEQPGNPGDPRVRTPPPWGPHFFALIPSSPKEVPATPSSRRDP IAPTATLLSKKTPATLAPKEALIPPAMTVPSPKKTPAIPTPKE APATPSSKEASSPPAVTPSTYKGAPSPKELLIPPAVTSPSPKE APTPPAVTPPSPEKGPATPAPKGTPTSPPVTPSSLKDSPTSPA SVTCKMGATVPQASKGLPAKKGPTALKEVLVAPAPESTPIITA PTRKGPQTKKSSATSPPICPDPSAKNGSKG
257	996	79	3	FFLKIQGLGWARWLTPVIPVLWEAE
258	997	307	475	AGFGYGLPISRLYAKYFQGDLNLYSLSGYGTDAIIYLKVSLEF NSKILFLKPLLLL
259	998	26	622	WMRAPMLQKQQAPRMDTPPPEERLEKQNEKLNNQEEETEFKEL DGLREALANLRGLSEEERSEKAMLRSRIEEQSQLICILKRRSD EALERCQILELLNAELEEKMMQEAEKLKAQGEYSRKLEERFMT LAANHELMLRFKDEYKSENIKLREENEKLRLENNSLFSQALKD EEAKVLQLTVRCEALTGELETLKERC
260	999	2	241	DPGASHASVQVQVLKEQLFAGRMPSPFRSCALMGMCGSRSADN LSCPSPLNVMEPVSFFPLKSLGKGMIQHFRHIVSLV
261	1000	1	620	VTTTTHSVGRGHELQLLNEELRNIELECQNIMQAHRLQKVTDQ YGDIWTLHDGGFRNYNTSIDMQRGKLDDIMEHPEKSDKDSSSA YNTAESCRSTPLTVDRSPDSSLPRVINLTNKKNLRSTMAATQS SSGQSSKESTSTKAKTTEQGCSAESKEKVLEGSKLPDQEKAVS EHIPYLSPYHSSSYRYANIPAHARHYQSYMQLIQ
262	1001	3	420	VWGCLATVSTHKKIQGLPFGNCLPVSDGPFNNSTGIPFFYMTA KDPVVADLMKNPMASLMLPESEGEFCRKNIVDPEDPRCVQLTL TGQMIAVSPEEVEFAKQAMFSRHPGMRKWPRQYEWFFMKMRIE HIWLQKWYG
263	1002	43	441	QAANMAVARVDAALPPGEGSVVNWSGQGLQKLGPNLPCEADIH TLILDKNQIIKLENLEKCKRLIQLSVANNRLVRMMGVAKLTLL RVLNLPHNSIGCVEGLKELVHLEWLNLAGNNLIAMEQINSCTA LQHL
264	1003	3	834	FRAAVGAVPEGAWKDTAQLHKSEEAKRVLRYYLFQGQRYIWIE TQQAFYQVSLLDHGRSCDDVHRSRHGLSLQDQMERKAIYGPNV ISIPVKSYPQLLVDEAFSIALWLADHYYWYALCIFLISSISIC LSLYKTRKQSQTLRDMVKLSMRVCVCRPGGEEEWVDSSELVPG DCLVLSQEGGLMPCDAALVAGECMVNDSSLTGESIPVLKTALP EGLGPYCAETHRRHTLFCGTLILHARAYVGPHVLAVVTRTGMS REAGLERDPGSAPLKRWS
265	1004	2	670	FVGGGLHLHLCLLLCFMLPEDAAMAVLTASNHVSNVTVNYNIT VERMNRMQGLRVSTVPAVLSPNATLALTAGVLVDSAVEVAFLW TFGDGEQALHQFQPPYNESFPVPDPSVAQVLVEHNVTHTYAAP GEYVLTVLASNAFENRTQQVLIRSGRVPIVSLECVSCKAQAVY EVSRSSYVYLEGRCLNCSSGSKRGRWAARTFSNKTLVLDETTT STGSASM

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
266	1005	2	1093	PEFLGRLFRGKAATLHVHSDQKPLHDGALGSQQNLVRMKEALR ASTMDVTVVLPSGLEKRSVLNGSHAMMDLLVELCLQNHLNPSH HALEIRSSETQQPLSFKPNTLIGTLNVHTVFLKEKVPEEKVKP GPPKVPEKSVRLVVNYLRTQKAVVRVSPEVPLQNILPVICAKC EVSPEHVVLLRDNIAGEELELSKSLNELGIKELYAWDNRRETF RKSSLGNDETDKEKKKFLGFFKVNKRSNSKGCLTTPNSPSMHS RSLTLGPSLSLGSISGVSVKSEMKKRRAPPPPGSGPPVQDKAS EKVSLGSQIDLQKKKRRAPAPPPPQPPPPSPLIPNRTEDKEEN RKSTMVYCCASFPTQAKRF
267	1006	686	400	VQWHNLHSLQPLPAGFK*FLCFSLPSSWDYRCAPPLP/APFFF YFLFLVELGFHHIG*AGLELTSTDLPASAS/ESAGITGMSHRA RPMDFFLLKIL
268	1007	1	453	GRRFRPPSDEEREPWEPWTQLRLSGHLKPLHYNLMLTAFMENF TFSGEVNVEIACRNATRYVVLHASRVAVEKVQLAEDRAFGAVP VAGFFLYPQTQVLVVVLNRTLDAQRNYNLKIIYNALIENELLG FFRSSYVLHGERRFLGVTQFSP
269	1008	333	526	KELDPFYNS*RKIKYLRIYLTKEVKDLYKENYKTLLKEITDDT N/KKHIPSSWTGRINTVKMTIL
270	1009	699	882	VPHPLQAIHEQMNCKEYQEDLALRAQNDAAARRPSEMFKVRLA QGRGLASLSSGIQSGVG
271	1010	16	148	RWNSLTCVVLTFLGHRLLKRFLVPKLRRFLKPQGHPRLLLWFK R
272	1011	1	659	YGEFVTYQGVAVTRSRKEGIAHNYKNETEWRANIDTVMAWFTE EDLDLVTLYFGEPDSTGHRYGPESPERREMVRQVDRTVGYLRE SIARNHLTDRLNLIITSDHGMTTVDKRAGDLVEFHKFPNFTFR DIEFELLDYGPNGMLLPKEGRLEKVYDALKDAHPKLHVYKKEA FPEAFHYANNPRVTPLLMYSDLGYVIHGVSRLLEAPPPGAPSP GSGS
273	1012	146	413	RIPLLRLRSSTYRSKGFDVTVKHSHGSWTGFGGEDLATIPKGL NTYFLVNIATIFESKNFFLPGIKWNGILGLSYATLAKPSSSLE TFF
274	1013	3	251	IKSYSGPNGRSCQIWQRLRWGSRELLLGWKLSHSFSTCPFQFP DIVEFCEAMANAGKTVIVAALDGTFQRKVRRLIQVWSWD
275	1014	326	651	YCFCFDLLH*CIHRDVKPENILITKHSVIKLCDFGFARLLTGP SDYYTDYVATRWYRSPELPVGDTQY\GPPV\DVW\AIGCVSAE \LLSGKCLWWPGKS/DMLDQLYLIRK
276	1015	224	435	RGWALDWIGADLSLHLQEEVETEVAWEECGHVLLSLCYSSQQG GLLVGVLRCAHLAPMDANGYSDPFVRL
277	1016	2	429	GGILAMEYAPGGTLAEFIQKRCNSLLEEETILHFFVQILLALH HVHTHLILHRDLKTQNILLDKHRMVVKIGDFGISKILSSKSKA YTVVGTPCYISPELCEGKPYNQKSDIWALGCVLYELASLKRAF EAANLPALVLKIM

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
278	1017	1	262	VQCGGIHQVSGAVVVSGLLQGMMGLLGSPGHVFPHCGPLVLAP SLVVAGLSAHREVAQFCFTHWGLALLYVSPERRGMVPSGGVWG D
279	1018	1	480	PRMTGSTHASAPSYGGSCRNNLFYREETYTPKAETDEMNEVET APIPEENHVWLQPRVMRPTKPKKTSAVNYMTQVVRCDTKMKDR CIGSTCNRYQCPAGCLNHKAKIFGSLFYESFASICRAAIHYGI LDDKGGLVDITRNGKVPFFVKSERHGVQSLR
280	1019	271	792	VPQNIICAFFCVPCRFASTIPFWGLTLHLQHLGNNVFLLQTLF GAVTLLANCVAPWALNHMSRRLSQMLLMFLLATCLLAIIFVPQ EMQTLRVVLATLGVGAASLGITCSTAQENELIPSIIRGRATGI TGNFANIGGALASLVMILSIYSRPLPWIIYGVFAILSGLVVLL LP
281	1020	2	679	VLVSRDHMKSAQQFFQLVGGSASECDTIPGRQCMASCFFLLKQ FDDVLIYLNSFKSHFYNDDIFNFNYAQAKAATGNTSEGEEAFL LIQSEKMKNDYIYLSWLARGYIMNKKPRLAWELYLKMETSGES FSLLQLIANDCYKMGQFYYSAKAFDVLERLDPNPEYWEGKRGA CVGIFQMIIAGREPKETLREVLHLLRSTGNTQVEYMIRIMKKW AKENRVSILK
282	1021	3	359	LKVSDELVQQYQIKNQCLSAIASDAEQEPKIDPYAFVEGDEEF LFPDKKDRQNSEREAGKKHKVREITVHQRVTVDFVALHIVTLL LPQLSHFFCLRIERVIIYLEKPIFARLRWLMP
283	1022	3	538	GVPRNLPSSLEYLLLSYNRIVKLAPEDLANLTALRVLDVGGNC RRCDHAPNPCMECPRHFPQLHPDTFSHLSRLEGLVLKDSSLSW LNASWFRGLGNLRVLDLSENFLYKCITKTKAFQGLTQLRKLNL SFNYQKRVSFAHLVSGPPFLRGSLGRPLKGAGTWHGNLSFPLH FEWGKT
284	1023	3	442	ILFAALIWSSFDENIEASAGGGGGSSIDAVMVDSGAVVEQYKR MQSQESSAKRSDEQRKMKEQQAAEELREKQAAEQERLKQLEKE RLAAQEQKKQAEEAAKQAELKQKQAEEAAAKAAADAKAKAEAD AKAAEEAAKKAAADAKK
285	1024	1	119	AMEIVHEPRDLERYMREAVKVSNDSPVLLDRFLNDAIEC
286	1025	67	227	MLSPGYDYGYVCVEFSLLEDAIGCMEANQVALYFGQMMLEGYI FLYMGREGFK
287	1026	2	1101	PRVRSSGGQEDPASQQWARPRFTQPSKMRRRVIARPVGSSVRL KCVASGHPRPDITWMKDDQALTRPEAAEPRKKKWTLSLKNLRP EDSGKYTCRVSNRAGAINATYKVDVIQRTRSKPVLTGTHPVNT TVDFGGTTSFQCKVRSDVKPVIQWLKRVEYGAEGRHNSTIDVG GQKFVVLPTGDVWSRPDGSYLNKLLITRARQDDAGMYICLGAN TMGYSFRSAFLTVLPDPKPPGPPVASSSSATSLPWPVVIGIPA GAVFILGTLLLWLCQAQKKPCTPAPAPPLPGHRPPGTARDRSG DKDLPSLAALSAGPGVGLCEEHGSPAAPQHLLGPGPVAGPKLY PKLYT\DIPHHTHTHTPHPPAN
288	1027	3	96	NFHFTGKCLFMSGLSEVQLTHMDDHTLPGY

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289	1028	95	407	SPRKRKTRHSTNPPLECHVGWVMDSRDHGPGTSSVSTSNASPS EGAPLAGSYGCTPHSFPKFQHPSHELLKENGFTQQVYHKYRRR CLSERKRLGIGQSQEMNT
290	1029	1	359	PGSGGSAGGRDGSAYQGALLPREQFAAPLGRPVGTSYSATYPA YVSPDVAQSWTAGPFDGSVLHGLPGRRPTFVSDFLEEFPGEGR ECVNCGALSTPLWRRDGTGHYLCNACGLYHKMN
291	1030	2	513	PDHRHGALWWWYSCGVLPVTVSRNEGDERNQVLTLYLWIRQEW TDAYLRWDPNAYGGLDAIRIPSSLVWRPDIVLYNKYCLS/AAP PLSYPSLDLPLAVGV**SPLPTT*PGCHAALEAFPQDPSKLPS TQPLHGTPTLGYPRPAQAERLLGTYCVVQGRCLNHKGLSRAHF
292	1031	1	595	YALTGALVIVTGMVMGNIADYFNLPVSSMSNTFTFLNAGILIS IFLNAWLMEIVPLKTQLRFGFLLMVLAVAGLMFSHSLALFSAA MFILGVVSGITMSIGTFLVTQMYEGRQRGSRLLFTDSFFSMAG MIFPMIAAFLLARSIEWYWVYACIGLVYVAIFILTFGCEFPAL CSHATKLGTASSYPSLDVVQLRTLNA
293	1032	71	479	MAKVGLKTEHYDRYPHMFSGGQRQRIAIARGLMLDPDVVIADE PVSALDVSVRAQVLNLMMDLQQELGLSYVFISHDLSVVEHIAD EVMVMYLGRCVEKGTKDQIFNNPRHPYTQALLSATPRLNPDDR RERIKLSX*
294	1033	2	427	SATLERVLNHPDETQARRLMTLEDIVSGYSNVLISLADSQGKT VYHSPGAPDIREFTRDAIPDKDAQGGEVYLLSGPTMMMPGHGH GHMEHSNWRMINLPVGPLVDGKPIYTLYIALSIDFHLHYINDL MNKLIMTASVII
295	1034	3	342	VLAYPGIKVSTAEARAILPAQYRRQDCIAHGRHLAGFIHACYS RQPELAAKLMKDVIAEPYRERLLPGFRQARQAVAEIGAVASGI SGSGPTLFALCDKPETAQRVADWLGK
296	1035	2	279	GQQQRVALARALILKPKVLLFDEPLSNLDANLRRSMRDKIREL QKQFDITSLYVTHDQSEAFAVSDTVLVMNKGHIMQIGSPQDLR VRRLNW
297	1036	3	157	AVHYLERVRIAEHAHKFPGQISGGQQQRVAIARSLCMKPKIML FDEPTSAL
298	1037	1	217	APYDAENYFDYDNLNNGPSLQHWFGVDSLGRDIFSRVLVGAQI SLAAGVFAVFIGAAIGTLLGLLAGYYEGW
299	1038	3	570	VFCLIADLDPIDELVDFPIVYASALNGIAGLDHEDMAEDMTPL YQAIVDHVPAPDVDLDGPFQMQISQLDYNSYVGVIGIGRIKRG KVKPNQQVTIIDSEGKTRNAKVGKVLGHLGLERIETDLAEAGD IVAITGLGELNISDTVCDTQNVEALPALSVDEPTVSMFFCVNT SPFCGKEGKFVTSRQI
300	1039	1	366	QGTRAESQGSSKDKTRLAFAGLKFGDYGSIDYGRNYGVAYDIG AWTDVLPEFGGDTWTQTDVFMTQRATGVATYRNNDFFGLVDGL NFAAQYQGKNDRSDFDNYTEGNHGFGFSATYEYEG
301	1040	3	201	DTYSVSIPLGATINMAGAAITITVLTLAAVNTLGIPVDLPTAL LLSVVASLCACGASGVAGGSLL

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302	1041	1	140	ANAQQGLPSGITLKLNNLVDKGLVDRLYAASSSGVPVNLLVRG TCS
303	1042	2	442	ARMTLIPGTHLLENIHNIWVNGVGTNSAPFWRMLLNSFVMAFS ITLGKITVSMLSAFAIVWFRFPLRNLFFWMIFITLMLPVEVRI FPTVEVIANLQMLDSYAGLTLPLMASATATFLFRKLNMSGPDK VVPAARISGYGPRVRKQ
304	1043	2	403	CAKCLRDADECPSGAFERIGRDISLDALEREVMKDDIFFRTSG GGVTLSGGEVLMQAEFATRFLQRLRLWGVSCAIETAGDAPASK LLPLAKLCDEVLFDLKIMDATQARDVVKMNLPRVLENLRLLVS EGVN
305	1044	1	346	YLLLFVCFLVMSLLVGLVYKFTAERAGKQSLDDLMNSSLYLMR SELREIPPHDWGKTLKEMDLNLSFDLRVEPLSKYHLDDISMHR LRGGEIVALDDQYTFLQRIPRSHYVLAVG
306	1045	1	207	VELFLSDEGDDVVIEVADQGCGVPESLRDKIFEQGVSTRADEP GEHGIGLYLIASYVTRCGGVITLEDN
307	1046	3	213	DAIIAPDANALPAAAQAAENLKNDKVAIVGFSTPNVMRPYVER GTVKEFGLWDVVQQGKISVYVADALQ
308	1047	1	129	YIVVTGKTHCGTPLTTVTGDATQSGYLTLNLPEMWEVSGYNRV
309	1048	271	46	XEGVEPDINASKTRQQLNDVAGKMKIIEARLSALTNNQTKSLK LNPVALPKVASQLLDELGYSLLARRADLQSAHX*
310	1049	16	253	ENIAEEYATKRYRSNVINWGMLPLQMAEVPTFEVGDYIYIPGI KAALDNPGTTFKGYVIHEDAPVTEITLYMESQEART
311	1050	2	299	LQTEIGSMVYAVKPGDGSAREQAASCQRVIGGLANIAEEYATK RYRSNVINWGMLPLQMAEVPTFEVGDYIYILGFKAAKYSPGTA FTVYAISGYGPRI
312	1051	1	344	TLEDLLMALDGEQHLQQQVSEKVLADNVLIAPGSVKPDATFWS ALIQDRYNVMTCIEKDACVLVEQDLNSDGQAERILFAFNDDRV IVYGFDSDRKEWDALDMSLLPNEITKEK
313	1052	2	630	ESNSRCRKMPGERCRGGPARLSLLLDLPTRPLPHPRQVIDFGS ASIFSEVRYVKEPYIQSRFYRAPEILLGLPFCEKVDVWSLGCV MDELHLGWPLYPGNNEYDQVRYICETQGLPKPHLLHAACKAHH FFKRNPHPDAANPWQLKSSADYLAETKVRPLERRKYMLKSLDQ IETVNGGSVASRLTFPDREALAEHADLKSMVEL/MKRLL
314	1053	1	302	RLVKKRVECRQCGKAGRNQSTLKTHMRSHTGEKPYECDHCGKA FSIGSNLNVHRRIHTGEKPYECLVCGEAFSDHSSLRSHVKTHR GEKLFVSSVWKRLQ
315	1054	1318	730	CGPGFSLSFFFLRWSF\ALVAQAGVQWHDLGSLQPPAPGFKRF SSLSLLSRWDYRHAHARLIFVFLVEMGFLHVGQAGLELPTSGD PPTSASQSARITGVTTPLGTFFFFLRWSFALVAQAGGQCLDLG SLQLPPPGFKRLVCHFQTPQKHRCSCQAPGDCLQESFVMTGCV LRTVSESVQRANAGAGAETVQGL

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316	1055	2486	1429	MGNAAAAKKGSEQESVKEFLAKAKEDFLKKWESPAQNTAHLDQ FERIKTLGTGSFGRVMLVKHKETGNHYAMKILD*QKVGKLKQI EHTLNEKRILQAVNFPFLVKLEFSFKDNSNLYMVMEYVPGGEM FSHLRRIGRFSEPHARFYAAQIVLTFEYLHSLDLIYRDLKPEN LLIDQQGYIQVTDFGFAKRVKGRTWTLCGTPEYLAPEIILSKG YNKAVDWWALGVLIYEMAAGYPPFFADQPIQIYEKIVSGKVRF PSHFSSDLKDLLRNLLQVDLTKRFGNLKNGVNDIKNHKWFATT DWIAIYQRKVEAPFIPKFKGPGDTS\NFDDYEEEEIRV\SINE KFG\KEFSEF
317	1056	867	461	SSSRSSHGDSPPHSQTPCDTNRGLDTKH*/DSQSIEEKDSSQS E*NRIERRKEVERILQTNSDYM*HWSN*PENILPKKFFSKHQK CTATLSMRNTSIM/KKEGLF*AQFPSLLLSHLPAVGLGIYTGT HLTTSTSTF
318	1057	544	784	TFHSSLEKNILQPCR*RRA\ICLPLLL*PSVPLLAPQYFSDLR NSIVNSQPPEKQQAMHLCFENLMEGIERNLLTKNRDR
319	1058	1606	228	GTSGVQQEISRLTNENLDLKELVEKLEKNERKLKKQLKIYMKK AQDLEAAQALAQSERKRHELNRQVTVQRKEKDFQGMLEYHKED EALLIRNLVTDLKPQMLSGTVPCLPAYILYMCIRHA\DYTNDD LKVHSLLTSTINGIKKVLKKHNDDFEMTSFWLSNTC\RLLHCL KQYSGDEGFMTQNTAKQN\EHCLKNFDLTEYRQV\L\SDLSIQ IYQQLIKIAEGVLQPMIVSAMLEN*SIQGLSGVKPTGSQKHSS SMADEDNSYRLEAIIRQMNAFHTVMCDQGLDPEIILQVFKQLF YMINAVTLNDLLLRKDVCSWSTGMQLRYNISQLEEWLRGRNLH QSGAVQTMEPLIQAAQLLQLKKKTQEDAEAICSLCTSLSTQQI VKILNLYTPLNEFEERVTVAFIRTIQAQLQERNDPQQLLLDAK HMFPVLFPFNPSSLTMDSIHIPACLNLEFLNEV
320	1059	3	250	HEENTILKAAEVQVPPK*VVTPEAKAFI*RCLAYQKEDCIDAQ QLACDP\YLLHYIQKLVFVSSPAGAAIASTFGVSNSCSSN
321	1060	1332	500	GTTDEIMTRWARVSTTYNKRPLPATSWEDMKKGSFEGTSQNLP KRKQLEANRLSLKNDAPQAKHKKNKKKKEYLNEDVNGFMEYLR QNSQMVHNGQIIATDSEEVREEIAVALKKDSRREGRRLKRQAA KKNAMVCFHCRKPGHGIADCPAALENQDMGTGICYRCGSTEHE ITKCKAKVDPALGEFPFAKCFVCGEMGHLSRSCPDNPKGLYAD GGGCKLCGSVEHLKKDCPESQNSERMVTVGRWAKGMSADYEEI LDVPKPQKPKTKIPKVVNF
322	1061	384	102	DHVRKSLLKNRAENIVNIFKCNVVSLPNLPAFGQAQWLTPVIP ALWEAEVGGS*GQEIETILANAVK/SPFLLKIQKKKISRAWWR AP/VSPRYSGG

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
323	1062	1	777	SDAWADAWARSLSVSPSSYPELHTEVPLSVLILGLLVVFILSV CFGAGLFVFVLKRRKGVPSVPRNTNNLDVSSFQLQYGSYNTET HDKTDGHVYNYIPPPVVQMCQNPIYMAGREGRPSSLLPKPGKE FQLLGNLEEKKEEPATPAYTISATELLEKQATPREPELLYQNI AE/PSQGTS/TAQA*STITFVPYLKGQFAPSYESRRQNQDRIN KTVLYGTPRKCFVGQSKPNHPLLQAKPQSEPDYLEVLEKQTAI SQL
324	1063	1	1496	ALCHIAVGQQMNLHWLHKIGLVVILASTVVAMSAVAQLWEDEW EVLLISLQGTAPFLHVGAVAAVTMLSWIVAGQFARAERTSSQV TILCTFFTVVFALYLAPLTISSPCIMEKKDLGPKPALIGHRGA PMLAPEHTLMSFRKALEQKLYGLQADITISLDGVPFLMHDTTL RRTTNVEEEFPELARRPASMLNWTTLQRLNAGQWFLKTDPFWT ASSLSPSDHREAQNQSICSLAELLELAKGNATLLLNLRDPPRE HPYRSSFINVTLEAVLHSGFPQHQVMWLPSRQRPLVRKVAPGF QQTSGSKEAVASLRRGHIQRLNLRYTQVSRQELRDYASWNLSV NLYTVNAPWLFSLLWCAGVPSVTSDNSHTLSQVPSPLWIMPPD EYCLMWVTADLVSFTLIVGIFVLQKWRLGGIRSYNPEQIMLSA AVRRTSRDVSIMKEKLIFSEISDGVEVSDVLSVCSDNSYDTYA NSTATPVGPRGGGSHTKTLIERSGR
325	1064	1899	776	NSADYGDGPDSSDADPDSGTEEGVLDFSDPFSTEVKPRILLMG LRRSGKSSIQKVVFHKMSPNETLFLESTNKICREDVSNSSFVN FQIWDFPGQIDFFDPTFDYEMIFRGTGALIFVIDSQDDYMEAL ARLHLTVTRAYKVNTDINFEVFIHKVDGLSDDHKIETQRDIHQ RANDDLADAGLEKIHLSFYLTSIYDHSIFEAFSKVVQKLIPQL PTLENLLNIFISNSGIEKAFLFDVVSKIYIATDSTPVDMQTYE LCCDMIDVVIDISCIYGLKEDGAGTPYDKESTAIIKLNNTTVL YLKEVTKFLALVCFVREESFERKGLIDYNFHCFRKAIHEVFEV RMKVVKSRKVQNRLQKKKRATPNGTPRVLL
326	1065	1181	346	RTRGRDPGAGFRRTANKRCCRRRFLIGCGWLPLRSDWPLVSKM LSKGLKRKREEEEEKEPLAVDSWWLDPGHAAVAQAPPAVASSS LFDLSVLKLHHSLQQSEPDLRHLVLVVNTLRRIQASMAPAAAL PPVPSPPAAPSVADNLLASSDAALSASMASLLEDLSHIEGLSQ APQPLADEGPPGRSIGGAAPSLGALDLLGPATGCLLDDGLEGL FEDIDTSMYDNELWAPASEGLKPGPEDGPGKEEAPELDEAELD YLMDVLVGTQALERPPGPGR

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327	1066	1844	337	LQEVKARRNTLHKEKDHLVNDYEQNMKLLQTKYDADINLLKQE HALSASKASSMIEELEQNVCQLKQQLQESELQRKQQLRDQENK FQMEKSHLKHIYEKKAHDLQSELDKGKEDTQKKIHKFEEALKW KKWRQI*LDPN/LLREKQSKEFLWQLEDIRQRYEQQIVELKLE HEQEKTHLLQQHNAEKDSLVRDHEREIENLEKQLRAANMEHEN QIQEFKKRDAQVIADMEAQVHKLREELINVNSQRKQQLVELGL LREEEKQRATREHEIVVNKLKAESEKMKIELKKTHAAETEMTL EKANSKLKQIEKEYTQKLAKSSQIIAELQTTISSLKEENSQQQ LAAERRLQDVRQKFEDEKKQLIRDNDQAIKVLQDELENRSNQV RCAEKKLQHKELESQEQITYIRQEYETKLKGLMPASLRQELED TISSLKSQVNFLQKRASILQEE/RDYISRQKVQPISR*LHERM QRMRISRLCCGTSSSRFEDLDIVNCEISGIF
328	1067	1149	238	VINLVYLISSPRPELKPVDKESEVVMKFPDGFEKFSPPILQLD EVDFYYDPKHVIFSRLSVSADLESRICVVGENGAGKSTMLKLL LGDLAPVRGIRHAHRNLKIGYFSQHHV\EQL\DLNVQCLWELA GHASFPG\RPEEEY\RHQLGFGMGISGEL\AMRPLCQPVLGAR KKPKWPFAQMDYCPAPTFYIL\DEPTN\HLGHGRAIEALGPCL QTISGVGVILVSHE*SALSRLVCRE\LWVC*G\GGVTRVERKD FDQYRALLQGTVSAREGFPLGPPRLKDSPRDMGLVSQTPWGHH VGYPLPGRG
329	1068	26	674	CSAVEVKMAARTAFGAVCRRLWQGLGNFSVNTSKGNTAKNGGL LLSTNMKWVQFSNLHVDVPKDLTKPVVTISDEPDILYKRLSVL VKGHDKAVLDSYEYFAVLAAKELGISIKVHEPPRKIERFTLLQ SVHIYKKHRVQYEMRTLYRCLELEHLTGSTADVYLEYIQRNLP EGVAMEVTKFCFFIFL\TQLEQLPEHIKEPIWETLSEEKEESK S
330	1069	2105	1283	DFWDTAGQERFQSMHASYYHKTHACIMVFDVQRKVTHRNLSTW YTELREFRPEIPCIVVANKIDGGAIPAPGC*QFTGDLPSYISS SIPRAGNLQ*LVLPPTIRYNPWLVACILPTL*RSQLSRPALFP RHRSLLTELFLGPVSQSSLPIPLSGMKASSGPPLQTFFPSLDR QTNVLPSLY\ADINVTQKSFNFAKKFSLPLYFVSAADGTNVVK LFNDAIRLAVSYKQNSQDFMDEIFQELENFSLEQEEEDVPDQE QSSSIETPSEEVASPHS
331	1070	1	1109	GATPLGSVGGRTGKMDAATLTYDTLRFAEFEDFPETSEPVWIL GRKYSIFTEKDEILSDVASRLWFTYRKNFPAIGGTGPTSDTGW GCMLRCGQMIFAQALVCRHLGRDWRWTQRKRQPDSYFSVLNAF IDRKDSYYSIHQIAQMGVGEGKSIGQWYGPNTVAQVLKKLAVF DTWSSLAVHIAMDNTVVMEEIRRLCRTSVPCAGATAFPADSDR HCNGFPAGAEVTNRPSPWRPLVLLIPLRLGLTDINEAYVETLK HCFM\MPQSLGVIGGKPNSAH\YFIG*VG\EELIYLDPHTTQP AVEPTDGCFIPDESFHCQHPPCRMSIAELDPSIAVVRGGHLST QAFGAECCLGMTRKTFGFLRFFFSMLG
332	1071	39	284	ALCVVPFNTFHN\DFLLLDKEGTLDPVMDSFSTHWTTIGPADM FFS\FRQHYKNFKSHGTNPSKSVWAHATCQSCAFPNLLGW

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333	1072	2	1484	TRLAEFGTRDPCAQAPCEQQCEPGGPQGYSCHCRLGFRPAEDD PHRCVDTDECQIAGVCQQMCVNYVGGFECYCSEGHELEADGIS CSPAGAMGAQASQDLGDELLDDGEDEEDEDEAWKAFNGGWTEM PGILWMEPTQPPDFALAYRPSFPEDREPQIPYPEPTWPPPLSA PRVPYHSSVLSVTRPVVVSATHPTLPSAHQPPVIPATHPALSR DHQIPVIAANYPDLPSAYQPGILSVSHSAQPPAHQPPMISTKY PELFPAHQSPMFPDTRVAGTQTTTHLPGIPPNHAPLVTTLGAQ LPPQAPDALVLRTQATQLPIIPTAQPSLTTTSRSPVSPAHQIS VPAATQPAALPTLLPSQSPTNQTSPISPTHPHSKAPQIPREDG PSPKLALWLPSPAPTAAPTALGEAGLAEHSQRDDRWLLVALLV PTCVFLVVLLALGIVYCTRCGPHAPNKRITDCYRWVIHAGSKS PTEPMPPRGSLTGVQTCRTSV
334	1073	1	1406	LRVRRRPHLPAPPALRARRSDRRSSRAPAAFPPRPPHASPAPG PAMAQAVWSRLGRILWLACLLPWAPAGVAAGLYELNLTTDSPA TTGAVVTISASLVAKDNGSLALPADAHLYRFHWIHTPLVLTGK MEKGLSSTIRVVGHVPGEFPVSVWVTAADCWMCQPVARGFVVL PITEFLVGDLVVTQNTSLPWPSSYLTKTVLKVSFLLHDPSNFL KTALFLYSWDFGDGTQMVTEDSVVYYNYSIIGTFTVKLKVVAE WEEVEPDATRAVKQKTGDFSASLKLQETLRGIQVLGPTLIQTF QKMTVTLNFLGSPPLTVCWRLKPECLPLEEGECHPVSVASTAY NLTHTFRDPGDYCFSIRAENIISKTHQYHKIQVWPSRIQPAVF AFPCATLITVMLAFIMYMTLRNATQQKDMVENPEPPSGVRCCC QMCCGPFLLETPSEYLEIVRENHGLLPPLYKSVKTYTV
335	1074	1	866	VVEFAFQLSSVSVCLTVSFGWQLGTVSSCLSRDWFLKGNLLII IVSVLIILPLALMKHLGYLGYTSGLSLTCMLFFLVSVIYKKFQ LGCAIGHNETAMESEALVGLPSQGLNSSCEAQMFTVDSQMSYT VPIMAFAFVCHPEVLPIYTELCRPSKRRMQAVANVSIGAMFCM YGLTATFGYLTFYSSVKAEMLHMYSQKDPLILCVRLAVLLA\V TLTVPVVLFPIRRALQQLLFPGKAFSWPRHVAIALILLVLVNV LVICVPTIRDIFGVIGSTSAPSLIFILPSCI
336	1075	3	825	GAGSKSSMMQLMHLESFYEK\PPPGLIKEDDTKPEDCIPDVPG NEHAREFLAHTPTKGLWMPLEKEVKVKH/CTFHWIAS*FLGDG KFIPKATRLKDVWVSN*FTCLFWDLTRFIHDCIFF*NWSLMNK NFNIIY*FFISLR*NTLILQKYFPFSLLLGWHCKWYGHRTGYK ECPFFIKDNQKLQQFRVAHEDFMYDIIRDNKQHEKNVRIQQLK QLLEDSTSGEDRSSSSSSEGKEKHKKKKKKEKHKKRKKEKKKK KKRKHKSSKSNEGSDSE

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
337	1076	3	2451	EIAGAAAENMLGSLLCLPGSGSVLLDPCTGSTISETTSEAWSV EVLPSDSEAPDLKQEERLQELESCSGLGSTSDDTDVREVSSRP STPGLSVVSGISATSEDIPNKIEDLRSECSSDFGGKDSVTSPD MDEITHDFLYILQPKQHFQHIEAEADMRIQLSSSAHQLTSPPS QSESLLAMFDPLSSHEGASAVVRPKVHYARPSHPPPDPPILEG AVGGNEARLPNFGSPMF*LPAEMEAFKQRHS/YTPERLVRSRS S\DIVSSVRRPMSDPSWNRRP\GNEERELPPAAAIGATSLVAA PHSSSSSPSKDSSRGETEERKDSDDEKSDRNRPWWRKRFVSAM PKAPIPFRKKEKQEKDKDDLGPDRFSTLTDDPSPRLSAQAQVA EDILDKYRNAIKRTSPSDGAMANYESTEVMGDGESAHDSPRDE ALQNISADDLPDSASQAAHPQDSAFSYRDAKKKLRLALCSADS VAFPVLT\HSTRNGLPDHTDPEDNEIVCFLKVQIAEAINLQDK NLMAQLQETMRCVCRFDNRTCRKLLASIAEDYRKRAPYIAYLT RCRQGLQTTQAHLERLLQRVLRDKEVANRYFTTVCVRLLLESK EKKIREFIQDFQKLTAADDKTAQVEDFLQFLYGAMAQDVIWQN ASEEQLQDAQLAIERSVMNRIFKLAFYPNQDGDILRDQVLHEH IQRLSKVVTANHRALQIPEVYLREAPWPSAQSEIRTISAYKTP RDKVQCILRMCSTIMNLLSLANEDSVPGADDFVPVLVFVLIKA NPPCLLSTVQYISSFYASCLSGEESYWWMQFTAAVEFIKTIDD RK
338	1077	536	1305	WPMSLARGHGDTAASTAAPLSEEGEVTSGLQALAVEDTGGPSA SAGKAEDEGEGGREETEREGSGGEEAQGEVPSAGGEEPAEEDS EDWCVPCSDEEVELPADGQPWMPPPSEIQRLYELLAAHGTLEL QAEILPRRPPTPEAQSEEERSDEEPEAKEEEEEKPHMPTEFDF DDEPVTPKDSLIDRRRTPGSSARSQKREARLDKVLSDMKRHKK LEEQILRTGRDLFSLDSEDPSPASPPLRSSGGSSLFPRQRKY
339	1078	2	1771	LGRGTFGQVV*CWKRGTNEIVAIKILKNHPSYARQGQIEVSIL ARLSTESADDYNFVRAYECFQHKNHTCLVFEMLEQNLYDFLKQ NKFSPLPLKYIRPVLQQVATALMKLKSLGLIHADLKPENIMLV DPSRQPYRVKVIDFGSASHVSKAVCSTYLQSRYYRAPEIILGL PFCEAIDMWSLGCVIAELFLGWPLYPGASEYDQI/RYISQTQG LPAEYLLSAGTKTTRFFNRDTDSPYPLWRLKTPDDHEAETGIK SKEARKYIFNCLDDMAQVNMTTDLEGSDMLVEKAVRREFIDLL KKMLSIDSVKRFSPVGSLNHPFVTMSLFLDFPHSTHVKSCFQN MEICKRRVNMYDTVNQSKTPFITHVAPSTSTNLTMTFNNQLTT VHNQPSAASMAAVAQRSMPLQTGTAQICARPDPFQQALIVCPP GFQGLQASPSKHAGYSVRMENAVPIVTQAPGAQPLQIQPGLLA QQAWPSGTQQILLPPAWQQLTGVATHTSVQHAAVIPETMAGTQ QLADWRNTHAHGSHYNPIMQQPALLTGHVTLPAAQPLNVGVAH VMRQQPTSTTSSRKSKQHLYCGRARVSKIASR

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340	1079	2	2721	EFAICRYPLGMSGGQIPDEDITASSQWSESTAAKYGRLDSEEG DGAWCPEIPVEPDDLKEFLQIDLHTLHFITLVGTQGRHAGGHG IEFAPMYKINYSRDGTRWISWRNRHGKQVLDGNSNPYDIFLKD LEPPIVARFVRFIPVTDHSMNVCMRVELYGCVWLDGLVSYNAP AGQQFVLPGGSIIYLNDSVYDGAVGYSMTEGLGQLTDGVSGLD DFTQTHEYHVWPGYDYVGWRNESATNGYIEIMFEFDRIRNFTT MKVHCNNMFAKGVKIFKEVQCYFRSEASEWEPNAISFPLVLDD VNPSARFVTVPLHHRMASAIKCQYHFADTWMMFSEITFQSDAA MYNNSEALPTSPMAPTTYDPMLKVDDSNTRILIGCLVAIIFIL LAIIVIILWRQFWQKMLEKASRRMLDDEMTVSLSLPSDSSMFN NNRSSSPSEQGSNSTYDRIFPLRPDYQEPSRLIRKLPEFAPGE EESGCSGVVKPVQPSGPEGVPHYAEADIVNLQGVTGGNTYSVP AVTMDLLSGKRCGCGREFPPGKLLTFKEKLGEGQFGEVHLCEV EGMEKFKDKDFALDVSANQPVLVAVKMLRADANKNARNDFLKE IKIMSRLKDPNIIHLLSVCITDDPLCMITEYMENGDLNQFLSR HEPPNSSSSDVRTVSYTNLKFMATQIASGMKYLSSLNFVHRDL ATRNCLVGKNYTIKIADFGMSRNLYSGDYYRIQGRAVLPIRWM SWESILLGKFTTASDVWAFG\VTLWE\TFTFCQRKGPYS\QLS \DETGY*RNTGEFFPRPKGGQTYLPSTSPFVPDSCVIKLMLSC WRRDTKNRPSFQEIHLLLLQQGDERCCQCLAMFLRLRSSLQDL PLTHAYATPSGHLMKLRDRGLFALPSFPGHPHSLPLTHIYFFF FTLKN
341	1080	916	3	CSASPLRPGLLAPDLLYLPGAGQPRRPEAEPGQKPVVPTLYVT EAEAHSPALPGLSGPQPKWVEVEETIEVRVKKMGPQGVSPTTE VPRSSSGHLFTLPGATPGGDPNSNNSNNKLLAQEAWAQGTAMV GVREPLVFRVDARGSVDWAASGMGSLEEEGTMEEAGEEEGEDG DAFVTEESQDTHSLGDRDPKILTHNGRMLTLADLEDYVPGEGE TFHCGGPGPGAPDDPPCEVSVIQREIGEPTVG\SLCCSAWGMH WVPEALSASLGLSPMGR\HHRDPRSVALRAPPSSCGRPRLGLW AVLPG
342	1081	862	444	QGLAAEFLQVPAVTRAYTAACVLTTAAVQLELLSPFQLYFNPH LVFRKFQAPFLPWALMGFSLLLGNSILVDLLGIAVGHIYYFLE DVFPNQPGGKRLLQTPGFLGLQSSKAPAGSSLTIWTQQSQGGP GTAGELAAPS

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343	1082	3658	337	EKNALEPTVYFGMGV*APQVPRFQQRITGYQYYLQLRKDIWEE GIPCTLEQPIHLAGLAVQAIFGDFDQYESQDFLQKFALFPVGW LQDEKVLEEATQKVALLHQKYRGLTAPDAEMLYMQEVERMDGY GEESYPAKDSQGSDISIGACLEGIFVKHKNGRHPVVFRWHDIA NMSHNKSFFALELANKEETIQFQTEDMETAKYIWRLCVARHKF YRLNQCNLQTQTVTVNPIRRRSSSRMSLPKPQPYVMPPPP\QL HYNGHYTEPYASSQDNLFVPNQEG\YYGQFQTSLNRAQIDFNG RIR\NASVYSAHSTNSLNNPQPYLQPSPMSSNPSITGSDVMRP DYLPSHRHSAVIPPSYRPTPDYETVMKQLNRGLVHAERQSHSL RNLNIGSSYAYSRPAALVYSQPEIREHAQLPSPAAAHCPFSLS YSFHSPSPYPYPAERRPVVGAVSVPELTNAQLQAQDYPSPNIM RTQVYRPPPPYPPPRPANSTPDLSRHLYISSSNPDLITRRVHH SVQTFQEDSLPVAHSLQEVSEPLTAARHAQLHKRNSIEVAGLS HGLEGLRLKERTLSASAAEV\APRAVSVGSQP\SVFTERTQRE GPEEAEGLRYGHKKSLSDATMLIHSSEEEEDEDFEEESGARAP PARAREPRPGLAQDPPGCPRVLLAGPLHILEPKAHVPDAEKRM MDSSPVRTTAEAQRPWRDGLLMPSMSESDLTTSGRYRARRDSL KKRPVSDLLSGKKNIVEGLPPLGGMKKTRVDAKKIGPLKLAAL NGLSLSRVPLPDEGKEVATRATNDERCKILEQRLEQGMVFTEY ERILKKRLVDGECSTARLPENAERNRFQDVLPYDDVRVELVPT KENNTGYINASHIKVSVSGIEWDYIATQGPLQNTCQDFWQMVW EQGIAIIAMVTAEEEGGREKSFRYWPRLGSRHNTVTYGRFKIT TRFRTDSGCYATTGLKMKHLLTGQERTVWHLQYTDWPEHGCPE DLKGFLSYLEEIQSVRRHTNSTSDPQSPNPPLLVHCSAGVGRT GVVILSEIMIACLEHNEVLDIPRVLDMLR\QQRMMLVQTLCQY TFVYRVLIQVPEKAPRLILSSPQFPYGAQSCEAFTA
344	1083	6	304	RKKQKLAEE*VELSKLADLKDAEAVQKFFLEEI*L\GEEILAK GVDHLTNPSAVCGQPQWLLQVLQQTLPLPVIQMLLTKPLPVNQ RLVSAG/SLAKDDVE
345	1084	1255	635	SFCLHEFGWLGSSPQSDHPVPALLGLGAFVHHSLLQVHSSPGA GPVSFLFLGESCSPVDEPRCVPSCAFGFLSCFPLLNSAALERG LFFFVVFFFLESGSCQVARAGVRD/RDRGSLQPPPPGLKQFCL SLPSRWDHRHPPPLRVP*FVFVFLVELGFHHVAQAGLKLLTLS DPPAPASHSAGITGVSQRDQPVLFLRWASCSELVG
346	1085	116	415	EGFPGRSLSGGLCCRLRRRFPIDGYRPRRRRRWSCCPSGVRPV RRMSQKSWIESTLTKRECVYIIPSSKDPHRCLPGCQICQQLVR RGFTVLARMVSIS
347	1086	918	760	QNSTCLTAQTHSLLQHQPLQLTTLLDQYIREQREKDSVMSANG KPDPDTVPDS

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348	1087	1	750	LNPWKNALQDFCLPFLRITSLLQHHLFGEDLPSCQEEEEFSVL ASCLGLLPTFYQTEHPFISASCLDWPVPAFDIITHWCFEIKSF TERHAEQGKALLIQESKWKLPHLLQLPENYNTIFQYYHRKTCS VCTKVPKDPAVCLVCGTFVCLKGLCCKQQSYCECVLHSQNCGA GTGIFLLINASVIIIRGHRFCLWGSVYLDAHGEEDRDLRRGK PLYICKERYKVLEQQWISHTFDHINKRWGPHYNGL
349	1088	3	1374	KGQLVNLLPPENFPWCGGSQGPRMLRTCYVLCSQAGPRSRGWQ SLSFDGGAFHLKGTGELTRALLVLRLCAWPPLVTHGLLLQAWS RRLLGSRLSGAFLRASVYGQFVAGETAEEVKGCVQQLRTLSLR PLLAVPTEEEPDSAAKSGEAWYEGNLGAMLRCVDLSRGLLEPP SLAEASLMQLKVTALTSTRLCKELASWVRRPGASLELSPERLA EAMDSGQNLQVSCLNAEQNQHLRASLSRLHRVAQYARAQHVRL LVDAEYTSLNPALSLLVAALAVRWNSPGEGGPWVWNTYQACLK DTFERLGRDAEAAHRAGLAFGVKLVRGAYLDKERAVAQL\HG\ MEDPPTQADYEATS\QSYS\RCLELMLTHVARHGPMCHLMVAS HNEESVRQATK\GQAGYVVYKSIPYGSLEEVIPYLIRRAQENR SVLQGARREQELLSQKLWRRLLPGCRRIPH
350	1089	1036	306	VVEFGEMSTARAPEGLRWFQLYVHPDLQLNKQLIQRVESLGFK ALVITLDTPVCGNRRHDIRNQLRRNLTLTDLQSPKKGNAIPYF QMTPISTSLCWNDLSWFQSITRLPIILKGILTKEDAELAVKHN VQGIIVSNHGGRQLDEVLASIDALTEVGAAE*GNMKYYLDAGV RTGNDVQKALALGAKCIFLGRPILWGLACKGEHGVKEVLNILT NEFHTSMA\LTGCRSVAEINRNLVQFSRL
351	1090	1229	957	FFLRWSFTL\LPRLE/CQWLNLGSLQPPPPGFK*SSCLRLLSS WGLQVPTSMLG*FFCIFSREGISPCWPGWSQTPKVIHLPRPPR VLRLQA
352	1091	1145	365	LLCFVHTALQSFQGELYEPHVVIAIVVFLVKLGICK*RASWRK KVTLVVK*S/LKICFTKYGSCYHPGEKSSSWLFN*RMVNDCLA TSCSNRSFVIQQIPSSNLFMVVVDSSCLCESVAPITMAPIEIR YILLCAGPLTTTETSKGYQW*GNLGEKY*RRKITSFPLLERES S*ESCHCQILTSEMQSRKKQSLETCLNYSQHNESLKCERLKAQ KIRRRPESCHGFHPEENARECGGAPSLQAQTVLLLLPLLLMLF SR
353	1092	1140	790	VPSPTHDPKPAEAPMPA*PAPPGPASPGGALEPPAAARAGGSP TAVRSILTKERRPEGGYKAVWFGEDIGTEADVVVLNAPTLDVD GASDSGSGDEGEGAGRGGGPYDAPGGDDSYI

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354	1093	3	2293	LISLAGPTDDIQSTGPQVHALNILRALFRDTRLGENIIPYVAD GAKAAILGFTSPVWAVRNSSTLLFSALITRIFGVKRAKDEHSK TNRMTGREFFSRFPELYPFLLKQLETVANTVDSDMGEPNRHPS MFLLLLVLERLYASPMDGTSSALSMGPFVPFIMRCGHSPVYHS REMAARALVPFVMIDHIPNTIRTLLSTLPSCTDQCFRQNHIHG TLLQVFHLVQAYSDSKHGTNSDFQHELTDITVCTKAKLWLAKR QNPCLVTRAVYIDILFLLTCCLNRSAKDNQPVLESLGFWEEVR GIISGSELITGFPWAFKVPGLPQYLQSLTRLAIAAVWAAAAKS GERETNVPISFSQLLESAFPEVRSLTLEALLEKFLAAASGLGE KGVPPLLCNMGEKFLLLAMKENHPECFCKILKILHCMDPGEWL PQTEHCVHLTPKEFLIWTMDIASNERSEIQSVALRLASKVISH HMQTCVENRELIAAELKQWVQLVILSCEDHLPTESRLAVVEVL TSTTPLFLTNPHPILELQDTLALWKCVLTLLQSEEQAVRDAAT ETVTTAMSQENTCQSTEFAFCQVDASIALALALAVLCDLLQQW DQLAPGLPILLGWLLGESDDLVACVESMHQVEEDYLFEKAEVN FWAETLIFVKYLCKHLFCLLSKSGWRPPSPEMLCHLQRMVSEQ C\HLLSQFFRELPPAAEFVKTVEFTRLRIQEERTLACLRLLAF LEGKEGEDTLVLSVWDSYAESRQLTLPRTEAAC
355	1094	25	1265	HAFRPIALQRGVSFRGCSNQYAESRRLQGESGSRAFAHLMESL LQHLDRFSELLAVSSTTYVSTWDPATVRRALQWARYLRHIHRR FGRHGPIRTALERRLHNQWRQEGGFGRGPVPGLANFQALGHCD VLLSLRLLENRALGDAARYHLVQQLFPGPGVRDADEETLQESL ARLARRRSAVHMLRFNGYRENPNLQEDSLMKTQAELLLERLQE VGKAEAERPARFLSSLWERLPQNNFLKVIAVALLQPPLSRRPQ EELEPGIHKSPGEGSQVLVHWLLGNSEVFAAFCRALPAGLLTL VTSRHPALSPVYLGLLTDWGQRLHYDLQKGIWVGTESQDVPWE ELHNRFQSLCQAPPPLKDKVLTALETCKAQDGDFEEPGLSIWT DLLLALRSGAFRKRQVLGLSAGLSSV
356	1095	3	1027	SHLIQHQRIHT*E*AHECNECGKAFSQTSCLIQHHKMHRKEKS YECNEYEGSFSHSSDLILQQEVLTRQKAFDCDVWEKNSSQRAH LVQHQSIHTKE/K/PHECNEDGKIF/NQIQA/LIQHLRVHTRE K\YVCTACGKAFSHSSAIAQHQIIHTREKPSECDE*RKGISVK LLIDSC/RIYTSEKSYKCIECGKFFMLLVFSYLSHIWRIHMGI KFHCCNECEKAISQRNYLV*YQIHAMQKDYKCN/EACMCVRRF SHNPTLIQHQRIYT*ENLFGCSK/C/GRSFNRSLTSLCHIRIS I/RRQEFDVTQMEKLDTTFQA/STQHRNNGEKIVDYLFMKLLI HSPNLFHCTKI
357	1096	2638	2867	AVTLTAKICSFTPEPSETMSPPAGTNNSRHAALRAVTLPVKVC SFTPEPARSRTHQKEETPNTSEHQKEQTPEAPP

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358	1097	4747	4550	MAYSWQTDPNPNESHEKQYEHQEFLFVNQPHSSSQVSLGFDQI VDEISGKIPHYESEIDENTFFVPTAPKWDSTGHSLNEAHQISL NEFTSKSRELSWHQVSKAPAIGFSPSVLPKPQNTNKECSWGSP IGKHHGADDSRFSILAPSFTSLDKINLEKELENENHNYHIGFE *SSIPPTNSSFSSDFMPKEENKRSGHVNIVEPSLMLLKGSLQPG* MWESTWQKNIESIGCSIQLVEVPQSSNTSLASFCNKVKKIRER YHAADVNFNSGKIWSTTTAFPYQLFSKTKFNIHIFIDNSTQPL HFMPCANYLVKDLIAEILHFCTNDQLLPKDHILSVWGSEEFLQ NDHCLGSHKMFQKDKSVIQLHLQKSREAPGKLSRKHEEDHSQF YLNQLLEFMHIWKVSRQCLLTLIRKYDFHLKYLLKTQENVYNI IEEVKKICSVLGCVETKQITDAVNELSLILQRKGENFYQSSET SAKGLIEKVTTELSTSIYQLINVYCNSFYADFQPVNVPRCTSY LNPGLPSHLSFTVYAAHNIPETWVHRINFPLEIKSLPRESMLT VKLFGIACATNNANLLAWTCLPLFPKEKSILGSMLFSMTLQSE PPVEMITPGVWDVSQPSPVTLQIDFPATGWEYMKPDSEENRSN LEEPLKECIKHIARLSQKQTPLLLSEEKKRYLWFYRFYCNNEN CSLPLVLGSAPGWDERTVSEMHTILRRWTFSQPLEALGLLTSS FPDQEIRKVAVQQLDNLLNDELLEYLPQLVQAVKFEWNLESPL VQLLLHRSLQSIQVAHRLYWLLKNAENEAYPKSWYQKLLAALQ FCAGKALNDEFSKEQKLIKILGDIGERVKSASDHQRQEVLKKE IGRLEEFFQDVNTCHLPLNPALCIKGIDHDACSYFTSNALPLK ITFINANLMGKNISIIFKAGDDLRQDMLVLQLIQVMDNIWLQE GLDMQMIIYRCLSTGKDQRLVQMVPDAVTLAKIHRHSGLIGPL KENTIKKWFSQHNHLKADYEKALRNFFYSCAGWCVVTFILGVC DRHNDNIMLTKSGHMFHIDFGKFLGHAQTFGGIKRDRAPFIFT SEM\EYFITEGG\KNPQHFQDFV\ELCCRAYNIIRKHSQLLL\ NLL\EMMLYAG\LPELSGI\QDLKYVYNNLRPQDTDLEATSHF TKKIKESLECFPVKLNNLIHTLAQMSAISPAKSTSQTFPQESC LLSTTRSIERATILGFSKKSSNLYLIQVTHSNNETSLTEKSFE QFSKLHSQLQKQFASLTLPEFPHWWHLPFTNSDHRRFRDLNHY MEQILNVSHEVTNSDCVLSFFLSEAGQQTVEESSPVYLGEKFP DKKPKVQLVISYEDVKLTILVKHMKNIHLPDGSAPSAHVEFYL LPYPSEVRRRKTKSVPKCTDPTYNEIVVYDEVTELQGHVLMLI VKSKTVFVGAINIRLCSVPLDKEKWYPLGNSII*PLLLFYTSN FMQSVLH
359	1098	679	346	FFLRWSLDSVTQAGVQSHDLSSLQPPPPGFKQSSLFGLPSSWE *RWVPPCPANFFVFLVETGFRHVGQAGLELLTSNDLPVSACQS AGITGVTTVPQRKSMILYEVTICYP

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360	1099	2	1601	FVREIRGPAVPRLTSAEDRHRHGPHAHSPELQRTGRDYSLDYL PFRLWVGIWVATFCLVLVATEASVLVRYFTRFTEEGFCALISL IFIYDAVGKMLNLTHTYPIQKPGSSAYGCLCQYPGPGGNESQW IRTRPKDRDDIVSMDLGLINASLLPPPECTRQGGHPRGPGCHT VPDIAFFSLLLFLTSFFFAMALKCVKTSRFFPSVVRKGLSDFS SVLAILLGCGLDAFLGLATPKLMVPREFKPTLPGRGWLVSPFG ANPWWWSVAAALPALLLSILIFMDQQITAVILNRMEYRLQKGA GFHLDLFWVAVLMLLTSALGLPWYVSATVISLAHMDSLRRESR ACAPGERPNFLGIREQRLTGLVVFILTGASIFLAPVLKFIPMP VLYGIFLYMGVAALSSIQFTNRVKLLL\MPAKHQPDLLLLRHV PLTRVHLFTAISFA\CLGLLW\IIKSTPAAIIFPLMLLGLVGV RKALERVFSPQELLWLDELMPEEERSIPEKGLEPEHSFSGSDS EDSELMYQPKAPEINISVN*LE*EFVREIRGPAVPRLTSAEDR HRHGPHAHSPELQRTGRDYSLDYLPFRLWVGIWVATFCLVLVA TEASVLVRYFTRFTEEGFCALISLIFIYDAVGKMLNLTHTYPI QKPGSSAYGCLCQYPGPGGNESQWIRTRPKDRDDIVSMDLGLI NASLLPPPECTRQGGHPRGPGCHTVPDIAFFSLLLFLTSFFFA MALKCVKTSRFFPSVVRKGLSDFSSVLAILLGCGLDAFLGLAT PKLMVPREFKPTLPGRGWLVSPFGANPWWWSVAAALPALLLSI LIFMDQQITAVILNRMEYRLQKGAGFHLDLFCVAVLMLLTSAL GLPWYVSATVISLAHMDSLRRESRACAPGERPNFLGIREQRLT GLVVFILTGASIFLAPVLKFIPMPVLYGIFLYMGVAALSSIQF TNRVKLLLDASKTPARPATLAACASDQGPPLHSHQLCPVWGCF GIIKSTPAAIIFPLMLLGLVGVRKALERVFSPQELLWLDELMP EEERSIPEKGLEPEHSFSGSDSEDSELMYQPKAPEINISVN

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361	1100	1	2636	MGLKARRAAGAAGGGGDGGGGGGGAANPAGGDAAAAGDEERKV GLAPGDVEQVTLALGAGADKDGTLLLEGGGRDEGQRRTPQGIG LLAKTPLSRPVKRNNAKYRRIQTLIYDALERPRGWALLYH\AL VFLIVLG\CLILAVL\TTFKEYETVSGDWLLLLETFAIFIFGA EFALRIWAAGCCCRYKGWRGRLKFARKPLCMLDIFVLIASVPV VAVGNQGNVLATSLRSLRFLQILRMLRDGPGEGGTWKLLG\SA ICAHSKELITAWYIGFLTLILSSFLVYLVEKDVPEVDAQGEEM KEEFETYADALWWGLITLATIGYGDKTPKTWEGRLIAATFSLI GVSFFALPAGILGSGLALKVQEQHRQKHFEKRRKPAAELIQAA WRYYATNPNRIDLVATWRFYESVVSFPFFRKEQLEAASSQKLG LLDRVRLSNPRGSNTKGKLFTPLNVDAIEESPSKEPKPVGLNN KERFRTAFRMKAYAFWQSSEDAGTGDPMAEDRGYGNDFPIEDM IPTLKAAIRAVRILQFRLYKKKFKETLRPYDVKDVIEQYSAGH LDMLSRIKYLQTRIDMIFTPGPPSTPKHKKSQKGSAFTFPSQQ SPRNEPYV\ARPST\SEI\EDQRH*WGKFVKSLKGQV\QGLGR KLDFLVDMHMQHMERLQVQVTEYYPTKGTSSPAEAEKKEDNRY SDLKTIICNYSETGPPEPPYSFHQVTIDKVSPYGFFAHDPVNL PRGGPSSGKVQATPPSSATTYVERPTVLPILTLLDSRVSCHSQ ADLQGPYSDRISPRQRRSITRDSDTPLSLMSVNHEELERSPSG FSISQDRDDYVFGPNGGSSWMREKRYLAEGETDTDTDPFTPSG SMP\LSSTGDGISDSVWTPSNKPI

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362	1101	1	5433	RTRGIIEFDPKYTAFEVEEDVGLIMIPVVRLHGTYGYVTADFISQSSSASPGG VDYILHGSTVTFQHGQNLSFINISIIDDNESEFEEPIEILLTGATGGAVLGRH LVSRIIIAKSDSPFGVIRFLNQSKISIANPNSTMILSLVLERTGGLLGEIQVN WETVGPNSQEALLPQNRDIADPVSGLFYFGEGEGGVRTIILTIYPHEEIEVEE TFIIKLHLVKGEAKLDSRAKDVTLTIQEFGDPNGVVQFAPETLSKKTYSEPLA LEGPLLITFFVRRVKGTFGEIMVYWELSSEFDITEDFLSTSGFFTIADGESEA SFDVHLLPDEVPEIEEDYVIQLVSVEGGAELDLEKSITWFSVYANDDPHGVPA LYSDRQSILIGQNLIRSIQINITRLAGTFGDVAVGLRISSDHKEQRIVTENAE RQLVVKDGATYKVDVVPIKNQVFLSLGSNFTLQLVTVMLVGGRFYGMPTILQE AKSAVLPVSEKAANSQVGFESTAFQLMNITAGTSHVMISRRGTYGALSVAWTT GYAPGLEIPEFIVVGNMTPTLGSLSFSHGEQRKGVFLWTFPSPGWPEAFVLHL SGVQSSAPGGAQLRSGFIVAEIEPMGVFQFSTSSRNIIVSEDTQMIRLHVQRL FGFHSDLIKVSYQTTAGSAKPLEDFEPVQNGELFFQKFQTEVDFEITIINDQL SEIEEFFYINLTSVEIRGLQKFDVNWSPRLNLDFSVAVITILDNDDLAGMDIS FPETTVAVAVDTTLIPVETESTTYLSTSKTTTILQPTNVVAIVTEATGVSAIP EKLVTLHGTPAVSEKPDVATVTANVSIHGTFSLGPSIVYIEEEMKNGTFNTAE VLIRRTGGFTGNVSITVKTFGERCAQMEPNALPFRGIYGISNLTWAVEEEDFE EQTLTLIFLDGERERKVSVQILDDDBPEGQEFFYVFLTNPQGGAQIVEGKDDT GFAAFAMVIITGSDLHNGIIGFSEESQSGLELREGAVMRRLHLIVTRQPNRAF EDVKVFWRVTLNKTVVVLQKDGVNLMEELQSVSGTTTCTMGQTKCFISIELKP EKVPQVEVYPFVELYEATAGAAINNSARFAQIKILESDESQSLVYFSVGSRLA VAHKKATLISLQVARDSGTGLMMSVNFSTQBLRSAETIGRTIISPAISGKDFV ITEGTLVFEPGQRSTVLDVILTPETGSLNSFPKRFQIVLFDPKGGARIDKVYG TANITLVSDADSQAIWGLADQLHQPVNDDILNRVLHTISMKVATENTDEQLSA MMHLIEKITTEGKIQAFSVASRTLFYEILCSLINPKRKDTRGFSHFAELTENF AFSLLTNVTCGSPGEKSKTILDSCPYLSILALHWYPQQINGHKFEGKEGDYIR IPERLLDVQDAEIMAGKSTCKLVQFTEYSSQQWFISGNNLPTLKNKVLSLSVK GQSSQLLTNDNEVLYRIYAAEPRIIPQTSLCLLWNQAAASWLSDSQFCKVIEE TADYVECACLHMSVYAVYARTDNLSSYNEAFFTSGFICISGLCLAVLSHIFCA RYSMFAAKLLTHMMAASLGTQILFLASAYASPQLAEESCSAMAAVTHYLYLCQ FSWMLIQSVNFWYVLVMNDEHTERRYLLFFLLSWGLPAFVVILLIVILKGIYH QSMSQIYGLIHGDLCFIPNVYAALFTAALVPLTCLVVVFVVPIHAYQVKPQWK AYDDVFRGRTNAAEIPLILYLFALISVTWLWGGLHMAYRHFWMLVLFVIFNSL QLL\YPLFYFLLL*DQSSSASPGGVDYILHGSTVTFQHGQNLSFINISIIDDN ESEFEEPIEILLTGATGGAVLGRHLVSRIIIAKSDSPFGVIRFLNQSKISIAN PNSTMILSLVLERTGGLLGEIQVNWETVGPNSQEALLPQNRDIADPVSGLFYF GEGEGGVRTIILTIYPHEEIEVEETFIIKLHLVKGEAKLDSRAKDVTLTIQEF GDPNGVVQFAPETLSKKTYSEPLALEGPLLITFFVRRVKGTFGEIMVYWELSS EFDITEDFLSTSGFFTIADGESEASFDVHLLPDEVPEIEEDYVIQLVSVEGGA ELDLEKSITWFSVYANDDPHGVFALYSDRQSILIGQNLIRSIQINITRLAGTF GDVAVGLRISSDHKEQPIVTENAERQLVVKDGATYKVDVVPIKNQVFLSLGSN FTLQLVTVMLVGGRFYGMPTILQEAKSAVLPVSEKAANSQVGFESTAFQLMNI TAGTSHVMISRRGTYGALSVAWTTGYAPGLEIPEFIVVGNMTPTLGSLSFSHG EQRKGVFLWTFPSPGWPEAFVLHLSGVQSSAPGGAQLRSGFIVAEIEPMGVFQ FSTSSRNIIVSEDTQMIRLHVQRLFGFHSDLIKVSYQTTAGSAKPLEDFEPVQ NGELFFQKFQTEVDFEITIINDQLSEIEEFFYINLTSVEIRGLQKFDVNWSPR LNLDFSVAVITILDNDDLAGMDISFPETTVAVAVDTTLIPVETESTTYLSTSK TTTILQPTNVVAIVTEATGVSAIPEKLVTLHGTPAVSEKPDVATVTANVSIHG TFSLGPSIVYIEEEMKNGTPNTAEVLIRRTGGFTGNVSITVKTFGERCAQMEP NALPFRGIYGISNLTWAVEEEDFEEQTLTLIFLDGERERKVSVQILDDDEPEG QEFFYVFLTNPQGGAQIVEGKDDTGFAAFAMVIITGSDLHNGIIGFSEESQSG LELREGAVMRRLHLIVTRQPNRAFEDVKVFWRVTLNKTVVVLQKDGVNLMEEL QSVSGTTTCTMGQTKCFISIELKPEKVPQVEVYPFVELYEATAGAAINNSARP AQIKILESDESQSLVYFSVGSRLAVAHKKATLISLQVARDSGTGLMMSVNFST QELRSAETIGRTIISPAISGKDFVITEGTLVFEPGQRSTVLDVILTPETGSLN SFPKRFQIVLFDPKGGARIDKVYGTANITLVSDADSQAIWGLADQLHQPVNDD ILNRVLHTISMKVATENTDEQLSAMMHLIEKITTEGKIQAFSVASRTLFYEIL CSLINPKRKDTRGFSHFAELTENFAFSLLTNVTCGSPGEKSKTILDSCPYLSI LALHWYPQQINGHKFEGKEGDYIRIPERLLDVQDAEIMAGKSTCKLVQFTEYS SQQWFISGNNLPTLKNKVLSLSVKGQSSQLLTNDNEVLYRIYAAEPRIIPQTS LCLLWNQAAASWLSDSQFCKVIEETADYVECACLHMSVYAVYARTDNLSSYNE AFFTSGFICISGLCLAVLSHIFCARYSMFAAKLLTHMMAASLGTQILFLASAY ASPQLAEESCSAMAAVTHYLYLCQFSWMLIQSVNFWYVLVMNDEHTERRYLLP FLLSWGLPAFVVILLIVILKGIYHQSMSQIYGLIHGDLCFIPNVYAALFTAAL VPLTCLVVVFVVPIHAYQVKPQWKAYDDVFRGRTNAAEIPLILYLFALISVTW LWGGLHMAYRHFWMLVLFVIFNSLQLLVPSVLLFTSMRSTFPSFHTGTLTSRE KKSTFVLTCLLSPDSKGLGVLCFLNTEWAFQVH

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363	1102	2	2855	AAGATMERDGCAGGGSRGGEGGRAPREGPAGNGRDRGRSHAAE APGDPQAAASLLAPMDVGEEPLEKAARARTAKDPNTYKVLSLV LSVCVLTTILGCIFGLKPSCAKEVKSCKGRCFERTFG\NCRCD AACVELG\NCCLGLPGGTCI\EP\EHIW\TCNKFRCG\EKRLT RSLCACSDDCKD\RGDCLPSNLQFLCVQGE\KSWGRKNPCESH LMEP\QCP\AGFETPSLPLLIF/SLDGFRAEYLHTWGGLLPVI SKLKKCGTYTKNMRPVYPTKTFPNHYSIVTGLYPESHGIINNK MYDPKMNASFSLKSKEKFNPEWYKGEPIWVTAKYQGLKSGTFF WPGSDVEINGIFPDIYKMYNGSVPFEERILAVLQWLQLPKDER PHFYTLYLEEPDSSGHSYGPVSSEVIKALQRVDGMVGMLMDGL KELNLHRCLNLILISDHGMEQGSCKKYIYLNKYLGDVKNIKVI YGPAARLRPSDVPDKYYSFNYEGIARNLSCREPNQHFKPYLKH FLPKRLHFAKSDRIEPLTFYLDPQWQLALNPSERKYCGSGFHG SDNVFSNMQALFVGYGPGFKHGIEADTFENIEVYNLMCDLLNL TPAPNNGTHGSLNHLLKNPVYTPKHPKEVHPLVQCPFTRNPRD. NLGCSCNPSILPIEDFQTQFNLTVAEEKIIKHETLPYGRPRVL QKENTICLLSQHQFMSGYSQDILMPLWTSYTVDRNDSFSTEDF SNCLYQDFRIPLSPVHKCSFYKNNTKVSYGFLSPPQLNKNSSG IYSEALLTTNIVPMYQSFQVIWRYFHDTLLRKYAEERNGVNVV SGPVFDFDYDG\RCDSL\ENLRQKRRVHPVTQENFWIPNSTSF Y/VVLTSC\KDTSQTPLHC\ENL\DTLGFPFCLHRDWINSETC \VHG\KHDSSW\VEEFVKCLHRA\RITGC*GTSLGLSFYQQRK EPVSDILKLKTHLPTFSQED
364	1103	657	1	TVPPPPGGPSPAPLHPKRSPTSTGEAELKEERLPGRKASCSTA GSGSRGLPPL\SPMVSSAHNPNKAEIPERRKDSTSTPNNLPPS MMTRRNTYVCTERPGAERPSLLPNGKENSSGTPRVPPASPSSH SLAPPSGERSRLARGSTIRSTFHGGQVRDRRAGGWGWFFNKHA LQRAPRNAGAPSLMPGHRTVLINYGGGQDLKNWETCLAAPPNK HRR
365	1104	1	1313	HTLHHSSPTSEAEEFVSRLSTQNYFRSLPRGTSNMTYGTFNFL GGRLMIPNTGISLLIPPDAIPRGKIYEIYLTLHKPEDVRLPLA GCQTLLSPIVSCGPPG\VLLTRPVILG\MDHCG\EPSPDSW\S LRLKKQSCEGSWEDVLHLGEEAPSHLYYCQLEASACYVFTEQL SRYALVGEALSVAAAKRLKLLLFAPVACTSLEYNILVYCLHDT HDALNVVVQLEKQLQGQLIQEPLVLHFKDSYHNLRLSIHDVPS SLWKSKLLVSYQEIPFYHIWNGTQRYLHCTFTLERVSPSTSDL ACKLWVWQVEGDGQSFSINFNITKDTRFAELLALESEAGVPAL VGPSAFKIPFLIRQKIISSLDPPCRRGADWRTLAQKLHLDSHL. SFFASKPSPTAMILNLWEARHFPNGNLSQLAAAVAGTGPAGRW LLSQCSEAEC
366	1105	1	343	GSAAGQVQQQQQRRHQQGKVTVKYDRKELRKRLVLEEWIVEQL GQLYGCEEEEMPEVEIDIDDLFDAYSDEQRASKLQEALVDCYK PTEEFIKELLSRIRGMRKLSP\PQKKSV

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367	1106	2	1398	IMLDGRVRWLTPVISALWEAEMEDVIARMQDEKNGIPIRTVKS FLSKIPSVFSGSDIVQWLIKNLTIEDPVEALHLGTLMAAHGYF FPISDHVLTLKDDGTFYRFQTPYFWPSNCWEPENTDYAVYLCK RTMQNKARLELADYEAESLARLQRAFARKWEFIFMQAEAQAKV DKKRDKIERKILDSQERAFWDVHRPVPGCVNTTEVDIKKSSRM RNPHKTRKSVYGLQNDIRSHSPTHTPTPETKPPTEDELQQQIK YWQIQLDRHRLKMSKVADSLLSYTEQYLEYDPFLLPPDPSNPW LSDDTTFWELEASKEPSQQRVKRWGFGMDEALKDPVGREQFLK FLESEFSSENLRFWLAVEDLKKRPIKEVPSRVQEIWQEFLAPG APSAINLDSKSYDKTTQNVKEPGRYTFEDAQEHIYKLMKSDSY PRFIRSSAYQELLQAKK\KGKSLTSKRLTSLAQSY
368	1107	1	461	GTRDYPRIVNHLDHTYVTAPQAFMMFQYFVKVVPTVYMKVDGE VLTTNQIYVTRHEKAAYVLMGDQGLPGVFILYELSPMMVNLTE IHTFFSLFLTIVGA\TIGGMFFEHFVINYLTHKWGLGFYFKNE NSLQGGHRTLYGVNFFMYWSLRGGS
369	1108	2	1522	SVWWNSQRQFVVRAWGCAGPCGRAVFLAFGLGLGLIEEKQAES RRAVSACQEIQAIFTQKSKPGPDPLDTRRLQGFRLEEYLIGQS IGKGCSAAVYEATMPTLPQNLEVTKSTGLLPGRGPGTSAPGEG QERAPGAPAFPLAIKMMWNISAGSSSEAILNTMSQELVPASRV ALAGEYGAVTYRKSKRGPKQLAPHPNIIRVLRAFTSSVPLLPG ALVDYPDVLPSRLHPEGLGHGRTLFLVMKNYPCTLRQYLCVNT PSPRLAAMMLLQLLEGVDHLVQQGIAHRDLKSDNILVELDPDG CPWLVIADFGCCLADESIGLQLPFSSWYVDRGGNGCLMAPEVS TARPGPRAVIDYSKADAWAVGAIAYEIFGLVNPFYGQGKAHLE SRSYQEAQLPALPESVPPDVRQLVRALLQREASKRPSARVAAN VLHLSLWGEHILALKNLKLDKMVGWLLQQSAATLLANRLTEKC CVETKMKMLFLANLECETLCQAALLLCSWRAAL
370	1109	105	1252	RPLLRLAELPDHCYRMNSSPAGTPSPQPSRANGNINLGPSANP NAQPTDFDFLKVIGKGNYGKVLLAKRKSDGAFYAVKVLQKKSI LKKKEQSHIMAERSVLLKNVRHPFLVGLRYSFQTPEKLYFVLD YVNGGELFFHLQRERRFLEPRARFYAAEVASAIGYLHSLNIIY RDLKPENILLDCQGHVVLTDFGLCKEGVEPEDTTSTFCGTPEY LAPEVL\RKEPYDRAVDWWCLGAVLYEMLHGLPPFYSQDVSQM YENILHQPLQIPGGRTVAACDLLQSLLHKDQRQRLGSKADFLE IKNHVFFSPINWDDLYHKRLTPPFNPNVTGPADLKHFDPEFTQ EAVSKSIGCTPDTVASSSGASSAFLGFSYAPEDDDILDC

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371	1110	3	1608	RPQTLKGHQEKIRQRQSILPPPQGPAPIPFQHRGGDSPEAKNR VGPQVPLSEPGFRRRESQEEPRAVLAQKIEKETQILNCALDDI EWFVARLQKAAEAFKQLNQRKKGKKKGKKAPAEGVLTLRARPP \SEGEFIDCFQKIKLAINLLAKLQKHIQNPSAAELVHFLFGPL DLIVNTCSGPDIARSVSCPLLSRDAVDFLRGHLVPKEMSLWES LGESWMRPRSEWPREPQVPLYVPKFHSGWEPPVDVLQEAPWEV EGLASAPIEEVSPVSRQSIRNSQKHSPTSEPTPPGDALPPVSS PHTHRGYQPTPAMAKYVKILYDFTARNANELSVLKDEVLEVLE DGRQWWKLRSRSGQAGYVPCNILGEARPEDAGAPFEQAGQKYW GPASPTHKLPPSFPGNKDELMQHMDEVNDELIRKISNIRAQPQ RHFRVERSQPVSQPLTYESGPDEVRAWLEAKAFSPRIVENLGI LTGPQLFSLNKEELKKVCGEEGVRVYSQLTMQKAFLEKQQSGS ELEELMNKFHSMNQRRGEDS
372	1111	3	1046	AWHEGLVSSPAIGAYLSASYGDSLVVLVATVVALLDICFILVA VPESLPEKMRPVSWGAQISWKQADPFASLKKVGKDSTVLL\IC ITVCLSYLPEAG\QYSSFF\LYLR\QVIGFG\SVKIAAFIAMV GILSIVAQTAFLSILMRSLGNKNTVLLGLGFQMLQLAWYGFGS QAWMMWAAGTVAAMSSITFPAISALVSRNAESDQQGVAQGIIT GIRGLCNGLGPALYGFIFYMFHVELTELGPKLNSNNVPLQGAV IPGPPFLFGACIVLMSFLAALFIPEYSKASGVQKHSNSSSGSL TNTPERGSDEDIEPLLQDSSIWELSSFEEPGNQCTEL*TRQKV GFCIRHL
373	1112	1	1950	MAAGLATWLPFARAAAVGWLPLAQQPLPPAPGVKASRGDEVLV VNVSGRRFETWKNTLDRYPDTLLGSSEKEFFYDADSGEYFFDR DPDMFRHVLNFYRTGRLHCPRQECIQAFDEELAFYGLVPELVG DCCLEEYRDRKKENAERLAEDEEAEQAGDGPALPAGSSLRQRL WRAFENPHTSTAALVFYYVTGPFIAVSVIANVVETIPCRGSAR RSSREQPCGERFPQAFFCMDTACVLIFTGEYLLRLFAAPSRCR FLRSVMSLIDVVAILPYYIGLLVPKNDDVSGAFVTLRVFRVFR IFKFSRHSQGLRILGYTLKSCASELGFLLFSLTMAIIIFATVM FYAEKGTNKTNFTSIPAAFWYTIVTMTTLGYGDMVPSTIAGKI FGSICSLSGVLVIALPVPVIVSNFSRIYHQNQRADKRRAQQKV RLARIRLAKSGTTNAFLQYKQNGGLEDSGSGEEQAVCVRNRSA FEQQHHHLLHCLEKTTCHEFTDELTFSEALGAVSPGGRTSRST SVSSQPVGPGSLLSSCCPRRAKRRAIRLANSTASVSRG\SMQE LDMLAGL\RRSHAP\QSRSSL\NAKPHDSLDLNCDSG\DFVAA IISIPTPPANTPDESQPSSPGGGGRAGSTLRNSSLGTPCLFPE TVKISSL
374	1113	4	664	GWGKPFKDWTTGGQDTGGEPALLVGAGEGRAPRLNCPSGQIRS PGPGDLSIYDNWIRYFNRSSPVYGLVP/RSKTSARIYPTYHTA FDTFDYVDKFLDPGEEGDKGHPETRTGEAED*ALALSPCRR\F SSHQAVARTAGSVILRLSDSFFLPLKVSDYSETLRSFLQAAQQ DLGALLEQHSISLGPLVTAVEKFEAEAAALGQRISTLQKGSPD PLQVRML

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375	1114	1	1147	GIRGGGSLASGGPGPGHASLSQRLRLYLADSWNQCDLVALTCF LLGVGCRLTPGLYHLGRTVLCIDFMVFTVRLLHIFTVNKQLGP KIVIVSKMMKDVFFFLFFLGVWLVAYGVATEGLLRPRDSDFPS ILRRVFYRPYLQIFGQIPQEDMDVALMEHSNCSSEPGFWAHPP GAQAGTCVSQYANWLVVLLLVIFLLVANILLVNLLIAMFSYTF GKVQGNSDLYWKAQRYRLIREFHSRPALAPPFIVISHLRLLLR QLCRRPRSPQPSSPALEHFRVYLSKEAERKLLTWESVHKENFL LARARDKRESDSERLKRTSQKVDLALKQLGHIREYEQRLKVLE REVQQCSRVLGWVAEALSRSALLPPGGPPPPDLPGSKD
376	1115	3	329	LIKLCKSKAKSCENDLEMGMLNSKFKKTRYQAGMRNSENLTAN NTLSKPTRY/QGELKEIKQDISSLRYELLEEKSQATGELADLI QQLSEKFGKNLNKDHLRVNKGKDI
377	1116	1	2043	LPLLHAGFNRRFMENSSIIACYNELIQIEHGEVRSQFKLRACN SVFTALDHCHEAIEITSDDHVIQYVNPAFERMMGYHKGELLGK ELADLPKSDKNRADLLDTINTCIKKGKEWQGVYYARRKSGDSI QQHVKITPVIGQGGKIRHFVSLKKLCCTTDNNKQIHKIHRDSG DNSQTEPHSFRYKNRRKESIDVKSISSRGSDAPSLQNRRYPSM ARIHSMTIEAPITKVINIINAAQENSPVTVAEALDRVLEILRT TELYSPQLGTKDEDPHTSDLVGGLMTDGLRRLSGNEYVFTKNV HQSHSHLAMPITINDVPPCISQLLDNEESWDFNIFELEAITHK RPLVYLGLKVFSRFGVCEFLNCSETTLRAWFQVIEANYHSSNA YHNSTHAADVLHATAFFLGKERVKGSLDQLDEVAALIAATVHD VDHPGRTNSFL\CNAGSELAVLYNDT\AV\LESHHTALAFQ\L TVKDTK\CNIFKNID/RGNHYRTLRQAIIDMVLATEMTKHFEH VNKFVNSINKPMAAEIEGSDCECNPAGKNFPENQILIKRMMIK CADVANPCRPLDLCIEWAGRISEEYFAQTDEEKRQGLPVVMPV FDRNTCSIPKSQISFIDYFITDMFDAWDAFAHLPALMQHLADN YKHWKTLDDLKCKSLRLPSDRLKPSHRGGLLTDKGHCESQ

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378	1117	1	3585	AFLSKVEEDDYPSEELLEDENAINAKRSKEKNPGNQGRQFDVN LQVPDRAVLGTIHPDPEIEESKQETSMILDSEKTSETAAKGVN TGGREPNTMVEKERPLADKKAQRPFERSDFSDSIKIQTPELGE VFQNKDSDYLKNDNPEEHLKTSGLAGEPEGELSKEDHENTEKY MGTESQGSAAAEPEDDSFHWTPHTSVEPGHSDKREDLLIISSF FKEQQSLQRFQKYFNVHELEALLQEMSSKLKSAQQESLPYNME KVLDKVFRASESQILSIAEKMLDTRVAENRDLGMNENNIFEEA AVLDDIQDLIYFVRYKHSTAEETATLVMAPPLEEGLGGAMEEM QPLHEDNFSREKTAELNVQVPEEPTHLDQRVIGDTHASEVSQK PNTEKDLDPGPVTTEDTPMDAIDANKQPETAAEEPASVTPLEN AILLIYSFMFYLTKSLVATLPDDVQPGPDFYGLPWKPVFITAF LGIASFAIFLWRTVLVVKDRVYQVTEQQISEKLKTIMKENTEL VQKLSNYEQKIKESKKHVQETRKQNMILSDEAIKYKDKIKTLE KNQEILDDTAKNLRVMLESEREQNVKNQDLISENKKSIEKLKD VISMNASEFSEVQIALNEAKLSEEKVKSECHRVQEENARLKKK KEQLQQEIEDWSKLHAELSEQIKSFEKSQKDLEVALTHKDDNI NALTNCITQLNLLECESESEGQNKGGNDSDELANGEVGGDRNE KMKNQIKQMMDVSRTQTAISVVEEDLKLLQLKL\RASVSTKC\ NLEDQVKKLEDDRNSLQAAKAGLEDECKTLRQKVEILNELYQQ KEMALQKKLSQEEYERQEREHRLSAADEKAVSAAEEVKTYKRR IEEMEDELQKTERSFKNQIATHEKKAHENWLKARAAERAIAEE KREAANLRHKLLDLTQKMAMLQEEPVIVKPMPGKPNTQNPPRR GPLSQNGSFGPSPVSGGECSPPLTVEPPVRPLSATLNRRDMPR SEFGSLDGPLPHPRWSAEASGKPSPSDPGSGTATMMNSSSRGS SPTRVLDEGKVNMAPKGPPPFPGVPLMSTPMGGPVPPPIRYGP PPQLCGPFGPRPLPPPFGPGMRPPLGLREFAPGVPPGRRDLPL HPRGFLPGHAPFRPLGSLGPREYFIPGTRLPPPTHGPQEYPPP PAVRDLLPSGSRDEPPPASQSTSQDCSQALKQSP

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379	1118	3	2946	MAADSEPESEVFEITDFTTASEWERFISKVEEVLNDWKLIGNS LGKPLEKGIFTSGTWEEKSDEISFADFKFSVTHHYLVQESTDK EGKDELLEDVVPQSMQDLLGMNNDFPPRAHCLVRWYGLREFVV IAPAAHSDAVLSESKCNLLLSSVSIALGNTGCQVPLFVQIHHK WRRMYVGECQGPGVRTDFEMVHLRKVPNQYTHLSGLLDIFKSK IGCPLTPLPPVSIAIRFTYVLQDWQQYFWPQQPPDIDALVGGE VGGLEFGKLPFGACEDPISELHLATTW\PHLTEGIIVDNDVYS DLDPIQAPHWSVRVRKAENPQCLLGDFVTEFFKICRRKESTDE ILGRSAFEEEGKETADITHALSKLTEPASVPIHKLSVSNMVHT AKKKIRKHRGVEESPLNNDVLNTILLFLFPDAVSEKPLDGTTS TDNNNPPSESEDYNLYNQFKSAPSDSLTYKLALCLCMINFYHG GLKGVAHLWQEFVLEMRFRWENNFLIPGLASGPPDLRCCLLHQ KLQMLNCCIERKKARDEGKKTSASDVTNIYPGDAGKAGDQLVP DNLKETDKEKGEVGKSWDSWSDSEEEFFECLSDTEELKGNGQE SGKKGGPKEMANLRPEGRLYQHGKLTLLHNGEPLYIPVTQEPA PMTEDLLEEQSEVLAKLGTSAEGAHLRARMQSACLLSDMESFK AANPGCSLEDFVRWYSPRDYIEEEVIDEKGNVVLKGELSARMK IPSNMWVEAWETAKPIPARRQRRLFDDTREAEKVLHYLAIQKP ADLARHLLPCVIHAAVLKVKEEESLENISSVKKIIKQIISHSS KVLHFPNPEDKKLEEIIHQITNVEALIARARSLKAKFGTEKCE QEEEKEDLERFVSCLLEQPEVLVTGAGRGHAGRIIHKLFVNAQ RAAAMTPPEEEELKRMGSPEERRQNSVSDFPPPAGREFILRTTV PRPAPYSKALPQRMYSVLTKEDFRLAGAFSSDTSFF
380	1119	2333	670	SPTRTGDRSVSLIVFLTEGKPTVGETHTLKILNNTREAARGQV CIFTIGIGNDVDFRLLEKLSLENCGLTRRVHEEEDAGSQLIGF YDEIRTPLLSDIRIDYPPSSVVQATKTLFPNYFNGSEIIIAGK LVDRKLDHLHVEVTASNSKKFIILKTDVPVRPQKAGKDVTGSP RPGGDGEGDTNHIERLWSYLTTKELLSSWLQSDDEPEKERLRQ RAQALAVSYRFLTPFTSMKLRGPVPRMDGLEEAHGMSAAMGPE PVVQSVRGAGTQPGPLLKKPYQPRIKISKTSVDGDPHFVVDFP LSRLTVCFNIDGQPGDILRLVSDHRDSGVTVNGELIGAPAPPN GHKKQRTYLRTITILINKPERSYLEITPSRVILDGGDRLVLPC NQSVVVGSWGLEVSVSANANVTVTIQGSIAFVILIHLYKKPAP FQRHHLGFYIANSEGLSSNCHGLLGQFLNQDARLTEDPAGPSQ NLTHPLLLQVGEGPEAVLTVKGHQVPVVWKQRKIYNGEEQIDC WFARNNAAKLIDGEYKDYLASHPFDTGMTLGQGMSREL
381	1120	102	426	VPLESLSCSHADNWKQELTKFISPDQLPVEFGGTMTDPDGNPK CLTKINYGGEVPKSYYLCKQVRLQYEHTRSVGRGSSLQVENEI LFPGCVLRCPEVLQHLQPGSF

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382	1121	3	3726	PAAPEHTDPSEPRGSVSCCSLLRGLSSGWSSPLLPAPVCNPNK AIFTVDAKTTEILVANDKACGLLGYSSQDLIGQKLTQFFLRSD SDVVEALSEEHMEADGHAAVVFGTVVDIISRSGEKIPVSVWMK RMRQERRLCCVVVLEPVERVSTWVAFQSDGTVTSCDSLFAHLH GYVSGEDVAGQHITDLIPSVQLPPSGQHIPKNLKIQRSVGRAR DGTTFPLSLKLKSQPSSEEATTGEAAPVSGYRASVWVFCTISG LITLLPDGTIHGINHSFALTLFGYGKTELLGKNITFLIPGFYS YMDLAYNSSLQLPDLASCLDVGNESGCGERTLDPWQGQDPAEG GQDPRINVVLAGGHVVPRDEIRKLMESQDIFTGTQTELIAGGQ LLSCLSPQPAPGVDNVPEGSLPVHGEQALPKDQQITALGREEP VAIESPGQDLLGESRSEPVDVKPFASCEDSEAPVPAEDGGSDA GMCGLCQKAQLERMGVSGPSGSDLWAGAAVAKPQAKGQLAGGS LLMHCPCYGSEWGLWWRSQDLAPSPSGMAGLSFGTPTLDEPWL GVENDREELQTCLIKEQLSQLSLAGALDVPHAELVPTECQAVT APVSSCDLGGRDLCGGCTGSSSACYALATDLPGGLEAVEAQEV DVNSFSWNLKELFFSDQTDQTSSNCSCATSELRETPSSLAVGS DPDVGSLQEQGSCVLDDRELLLLTGTCVDLGQGRRFRESCVGH DPTEPLEVCLVSSEHYAASDRESPGHVPSTLDAGPEDTCPSAE EPRLNVQVTSTPVIVMRGAAGLQREIQEGAYSGSCYHRDGLRL SIQFEVRRVELQGPTPLFCCWLVKDLLHSQRDSAARTRLFLAS LPGSTHSTAAELTGPSLVEVLRARPWFEEPPKAVELEGLAACE GEYSQKYSTMSPLGSGAFGFVWTAVDKEKNKEVVVKFIKKEKV LEDCWIEDPKLGKVTLEIAILSRVEHANIIKVLDIFENQGFFQ LVMEKHGSGLDLFAFIDRHPRLDEPLASYIFRQVRAG\QSRLV SAVGYLRLKDIIHRDIKDENIVIAEDFTIKLIDFGSAAYLERG KLFYTFCGTIEYCAPEVLMGNPYRGPELEMWSLGVTLYTLVFE ENPFCELEETVEAAIHPPYLVSKELMSLVSGLLQPVPERRTTL EKLVTDPWVTQPVNLADYTWEEVFRVNKPESGVLSAASLEMGN RSLSDVAQAQELCGGPVPGEAPNGQGCLHPGDPRLLTS
383	1122	177	1365	PGTSAATCRFLSPPVISLSFTGLCISDLVVAVNGVWILVETFM LKGGNFFSKHVPWSYLVFLTIYGVELFLKVAGLGPVEYLSSGW NLFDFSVTVFAFLGLLALALNMEPFYFIVVLRPLQLLRLFKLK ERYRNVLDTMFELLPRMASLGLTLLIFYYSPAIVGMEFFCGIV FPNCCNTSTVADAYRWRNHTVGNRTVVEEGYYYLNNFDNILNS FVTLFELTVVNNWYIIMEGVTSQTSHWSRLYFMTFYIVTMVVM TIIVAFILEAFVFRMNYSRKNQDSEVDGGITLEKEISKEELVA VLELYREARGASSDVTRLLETLSQMERYQQHSMVFLGRRSRTK SDLSLKMYQEEIQEWYEEHAREQEQQRQLSSSAAPAAQQPPGS RQRSQTVT

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384	1123	1	986	LAGVGTQAPPRRPGGEMAAGQNGHEEWVGSAYLFVESSLDKVV LSDAYAHPQQKVAVYRALQAALAESGGSPDVLQMLKIHRSDPQ LIVQLRFCGRQPCGRFLRAYREGALRAALQRSLAAALAQHSVP LQL\DLRAGAERLEALLADEERCLSCILAQQPDRLRDEELAEL EDALRNLKCGSGARGGDGEVASAPLQPPVPSLSEVKPPPPPPP AQTFLFQGQPVVNRPLSLKDQQTFARSVGLKWRKVGRSLQRGC RALRDPALDSLAYEYEREGLYEQAFQLLRRFVQAEGRRATLQR LVEALEENELTSLAEDLLGLTDPNGGLA
385	1124	2409	399	SSKPKLKKRFSLRSVGRSVRGSVRGILQWRGTVDPPSSAGPLE TSSGPPVLGGNSNSNSSGGAGTVGRGLVSDGTSPGERWTHRFE RLRLSRGGGALKDGAGMVQREELLSFMGAEEAAPDPAGVGRGG GVAGPPSGGGGQPQWQKCRLLLRSEGEGGGGSRLEFFVPPKAS RPRLSIPCSSITDVRTTTALEMPDRENTFVVKVEGPSEYIMET VDAQHVKAWVSDIQECLSPGPCPATSPRPMTLPLAPGTSFLTR ENTDSLELSCLNHSESLPSQDLLLGPSESNDRLSQGAYGGLSD RPSASISPSSASIAASHFDSMELLPPELPPRIPIEEGPPAGTV HPLSAPYPPLDTPETATGSFLFQG\EPEGGEGDQPLSGYPWFH GMLSRLKAAQLVLTGGTGSHGVFLVRQSETRRGEYVLTFNFQG KAKHLRLSLNEEGQCRVQHLWFQSIFDMLEHFRVHPIPLESGG SSDVVLVSYVPSSQRQQGEQSRSAGEEVPVHPRSEAGSRLGAM RGCAREMDATPNASCTLMPFGASDC\EPTTSHDPPQPPEPPSW TDPPQPGEE\EASR\APGSGGQQAAAAAKERQEKEKAGG\GGV PEE\LVPVV*LVPVGELGEGHRPQAQEAQGRLGPGGDAGVPP\ MVQLQQSPLGG\DGEEGGHPR\AI\NNQYSFV
386	1125	2204	1042	FRAPVGTAARSPQVVIRRLPPGLTKEQLEEQLRPLPAHDYFEF FAADLSLYPHLYSRAYINFRNPDDILLFRDRFDGYIFLDSKDP EYKKFLETYCVEEEKTSANPETLLGEMEAKTRELIARRTTPLL EYIKNRKLEKQRIREEKREERRRRELEKKRLREEEKRRRREEB RCKKKETDKQKKIAEKEVRIKLLKKPEKGEEPTTEKPKERGEE IDTGGGKQESCAPGAVVKARPMEGSLEEPQETSHSGSDKEHRD VERSQEQESEAQRYHVDDGRRHRAHHEPERLSRRSEDEQRWGK GPGQDRGKKGSQDSGAPGEAMERLGRAQRCDDSPAPRKERLAN KDRPALQLYDPGARFRARECGGNRRICKAEGSGTGPEKREEAE
387	1126	176	800	GVWGVCVSGLLQVGSQRAQAWRAWSPMETPLTGTFLWPHIPQG LFFDDSYGFYPGQVLIGPAKIFSSVQWLSGVKPVLSTKSKFRV VVEEVQVVELKVTWITKSFCPGGTDSVSPP/PSVITQENLGRV KRLGCFDHAQR/HAWGALSVCLPSQGRASQDCLGMSRKKLRPG GGLYGQEGEAPVEEAGCADHVMLPRHPVFPGPFHGRPR

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388	1127	1	2017	FRDSSPCSAFEFHCLSGECIHSSWRCDGGPDCKDKSDEENCAV ATCRPDEFQCSDGNCIHGSRQCDREYDCKDMSDEVGCVNVTLC EGPNKFKCHSGECITLDKVCNMARDCRDWSDEPIKECGTNECL DNNGGCSHVCNDLKIGYECLCPDGFQLVAQRRCEDIDECQDPD TCSQLCVNLEGGYKCQCEEGFQLDPHTKACKAVGSIAYLFFTN RHEVRKMTLDRSEYTSLIPNLRNVVALDTEVASNRIYWSDLSQ RMICSTQLDRAHGVSSYDTVISRDIQAPDGLAVDWIHSNIYWT DSVLGTVSVADTKGVKRKTLFRENGSKPRAIVVDPVHGFMYWT DWGTPAKIKKGGLNGVDIYSLVTENIQWPNGITLDLLSGRLYW VDSKLHSISSIDVNGGNRKTILEDEKRLAHPFSLAVFEDKVFW TDIINEAIFSANRLTGSDVNLLAENLLSPEDMVLFHNLTQPRG VNWCERTTLSNGGCQYLCLPAPQINPHSPKFTCACPDGMLLAR DMRSCLTEG\EAAVATQETSTVRLKVSSTAVRTQHTTTRPVPD TSRLPGATPGLTTVEIVTMSHQALGDVAG\RGN\EKKPSSVRA LSIVLPIV\LLVFLCLGVFLLWKNWRLKNINSINFDNPVYQKT TEDEVHICHNQDGYSYPSRQMVSLEDDVA
389	1128	2299	1148	RIPGLGPPGSPPPPPHVRGMPGCPCPGCGMAGPRLLFLTALAL ELLGRAGGSQPALRSRGTATACRLDNKESESWGALLSGERLDT WICSLLGSLMVGLSGVFPLLVIPLEMGTMLRSEAGAWRLKQLL SFALGGLLGNVFLHLLPEAWAYTCSASPGGEGQSLQQQQQLGL WVIAGILTFLALEKMFLDSKEEGTSQAPNKDPTAAAAALNGGH CLAQPAAEPGLGAVVRSIKVSGYLNLLANTIDNFTHGLAVAAS FLVSKKIGLLTTMAILLHEIPHEVGDFAILLRAGFDRWSAAKL QLSTALGGLLGAGFAICTQSPKGVEETAAWVLPFTSGGFLYIA LVNVLPDLLEEEDPWRSLQQLLLLCAGIVVMVLFSLFVD
390	1129	1	523	GKVSAGQAGADRTLRRAPEPRFSQEPTGNSAYPQLRPFLDPQG RDLKPSALVPPTRSHTGRRPWLHTQPLPGPQGRAWGPTC/TPA CVDRVLESEEGRREYLAFPTSKSSGQKGRKELLKGNGRRIDYM LHAEEGLCPDWKAEVEEFSFITQLSGLTDHLPVAMRLMVSSGE EEA
391	1130	1459	765	PCGGIRLSASEAATLFGYLVVPAGGGGTFLGGFFVNKLRLRGS AVIKFCLFCTVVSLLGILVFSLHCPSVPMAGVTASYGGSLLPE GHLNLTAPCNAACSCQPEHYSPVCGSDGLMYFSLCHAGCPAAT ETNVDGQKVSGAAAYRPCPPLDPGKGPPCLPLVIGAIVGLPRC TETVAVSLRIFPLVLAM\HCREMHFNLSEKAPPSGFHIRCNFL YIPQQHSCTNGNSTMCP
392	1131	1668	962	LLRKVGAPGGARGVIRLLDWFERPDGFLLVLERPEPA\QD\LF DFITERGALDEPLARRF\FAQVLAAVRHCHSCGVVHRDIKDEN LLVDLRSGELKLIDFGSGALLKDTVYTDFDGTRVYSPPEWIRY HRYHGRSATVWSLGVLLYDMVCGDIPFEQDEEILRGRLLFRRR VSPECQQLIRWCLSLRPSERPSLDQIAAHPWMLGADGGAPESC DLRLCTLDPDDVASTTSSSESL

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393	1132	3	817	GKNSQKASPVDDEQLSVCLSGFLDEVMKKYGSLVPLSEKEVLG RLKDVFNEDFSNRKPFINREITNYRARHQKCNFRIFYNKHMLD MDDLATLDGQNWLNDQVINMYGELIMDAVPDKVHFFNSFFHRQ LVTKGYNGVKRWTKKVDLFKKSLLLIPIHLEVHWSLITVTLSN RIISFYDSQGIHFKFCVENIRKYLLTEAREKNR\LNLQGWQTA VTKCIPQQKNDSDCGVFVLQYCKCLAL\KQPFQFSQEDMPRVR KRIYKELCECRLMD
394	1133	1252	628	PPGG*QGSAAKHR/FP/KGYRHPALEARLGRRRTVQEARALLR CRRAGISAPVVFFVDYASNCLYMEEIEGSVTVRDYIQSTMETE K\TPQGLSNLAKTIGQVLARMHDEDLIHGDLTTSNMLLKPPLE QLNIVLIDFGLSFISALPEDKGVDLYVLEKAFLSTHPNTETVF EAFLKSYSTSSKKARPVLKKLDEVRLRGKKRSMVG
395	1134	2	1595	RACVFRPEDMMQGEAHPSASLIDRTIKMRKETEARKVVLAWGL LNVSMAGMIYTEMTGKLISSYYNVTYWPLWYIELALASLFSLN ALFDFWRYFKYTVAPTSLVVSPGQQTLLGLKTAVVQTTPPHDL AATQIPPAPPSPSIQGQSVLSYSPSRSPSTSPKFTTSCMTGYS PQLQGLSSGGSGSYSPGVTYSPVSGYNKLASFSPSPPSPYPTT VGPVESSGLRSRYRSSPTVYNSPTDKEDYMTDLRTLDTFLRSE EEKQHRVKLGSPDSTSPSSSPTFWNYSRSMGDYAQTLKKFQYQ LACRSQAPCANKDEADLSSKQAAEEVWARVAMNRQLLDHMDSW TAKFRNWINETILVPLVQEIESVSTQMRRMGCPELQIGEASIT SLKQAALVKAPLIPTLNTIVQYLDLTPNQEYLFERIKELSQGG CMSSFRWNRGGDFKGRKWDTDLPTDSAIIMHVFCTYLDSRLPP HPKYPDGKTFTSQHFVQTPNKPDVTNENVFCIYQSAINPPHYE LIYQRHVYIPAKGQK
396	1135	16	1542	SSAVEFINRNNSVVQVLLAAGADPNLGDDFSSVYKTAKEQGIH SLEVLITREDDFNNRLNNRASFKGCTALHYAVLADDYRTVKEL LDGGANPLQRNEMGHTPLDYAREGEVMKLLRTSEAKYQEKQRK REAEERRRFPLEQRLKEHIIGQESAIATVGAAIRRKENGWYDE EHPLVFLFLGSSGIGKTELAKQTAKYMHKDAKKGFIRLDMSEF QERHEVAKFIGSPPGYVGHEEGGQLTKKLKQCPNAVVLFDEVD KAHPDVLTIMLQLFDEGRLTDGKGKTIDCKDAIFIMTSNVASD EIAQHALQLRQEALEMSRNRIAENLGDVQISDKITISKNFKEN VIRPILKAHFRRDEFLGRINEIVYFLPFCHSELIQLVNKELNF WAKRAKQRHNITLLWDREVADVLVDGYNVHYGARSIKHEVERR VGNQLAAAYEQDLLP\GGCTLRITVEDSDKQLLKSPELPSPQA EKRLPKLRLEIIDKDSKTRRLDIRAPLHPEKVCNTI
397	1136	1848	1602	SSCDRERHGSLGMMSGSFILCLALVTRWSPQASSVPLAVYESK TRKSYRSQRDRDGKDRSQGMGLSLLVETRKLLLSANQG

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398	1137	1497	717	HTPMA/FFL/SFLSTSET/VYTFVILPKMLINLLSVARTISFN CCALQMFFFLGFAITNCLLLGVMGYDRYAAICHPLHYPTLMSW QVCGKLAAACAIGGFLASLTVVNLVFSLPFCSTNKVNHYFCDI SAVILLACTNTDVNGFVIFICGVLVLVVPFLFICVSYFCILRT ILKIPSAEGRRKAFSTCASHLSVVIVHYGCASFIYLRPTANYV SNKDRLVTVTYTIVTPLLNPMVYSLRNKDVQLAIRKVLGKKGS LKLYN
399	1138	2	1185	RPPAATRYPREKLKSMTSRDNYKAGSREAA\AAAAAAVAAAAA AAAAAAEPYPVSGAKRKYLEDSDPERSDYEEQQLQEEEEARKVK SGIRQMRLFSQDECAKIEARIDEVVSRAEKGLYNEHTVDRAPL RNKYFFGEGYTYGAQLQKRGPGQERLYPPGDVDEIPEWVHQLV IQKLVEHRVIPEGFVNSAVINDYQPGGCIVSHVDPIHIFERPI VSVSFFSDSALCFGCKFQFKPIRVSEPVLSLPVRRGSVTVLSG YAADEITHCIRPQDIKERRAVIILRKTRLDAPRLETKSLSSSV LPPSYASDRLSGNNRDPALKPKRSHRKADPDAAHRPRILEMDK EENRRSVLLPTHRRRGSFSSENYWRKSYESSEDCSEAAGSPAR KVKMRRH
400	1139	60	1699	VTWHFYFCSDHKNGHYIIPQMADRSRQKCMSQSLDLSELAKAA KKKLQALSNRLFEELAMDVYDEVDRRENDAVWLATQNHSTLVT ERSAVPFLPVNPEYSATRNQGRQKLARFNAREFATLIIDILSE AKRRQQGKSLSSPTDNLELSLRSQSDLDDQHDYDSVASDEDTD QEPLRSTGATRSNRARSMDSSDLSDGAVT\LQEYLELKKALAT SEAKVQQLMKVNSSLSDEL\RRLQREHFAPI\IHKLQAENLQL RQPPGPVPTPPLPSERAEHTPMAPGGSTHRRDRQAFSMYEPGS ALKPFGGPPGDELTTRLQPFHSTELEDDAIYSVHVPAGLYRIR KGVSASAVPFTPSSPLLSCSQEGSRHTSKLSRHGSGADSDYEN TQSGDPLLGLEGKRFLELGKEEDFHPELESLDGDLDPGLPSTE DVILKTEQVTKNIQELLRAAQEFKHDSFVPCSEKIHLAVTEMA SLFPKRPALEPVRSSLRLLNASAYRLQSECRKTVPPEPGAPVD FQLLTQQVIQCAYDIAKAAKQLVTITTREKKQ

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401	1140	1	1863	RYLSYGSGPKRFPLVDVLQYALEFASSKPVCTSPVDDIDASSP PSGSIPSQTLPSTTEQQGALSSELPSTSPSSVAAISSRSVIHK PFTQSRIPPDLPMHPAPRHITEEELSVLESCLHRWRTEIENDT RDLQESISRIHRTIELMYSDKSMIQVPYRLHAVLVHEGQANAG HYWAYIFDHRESRWMKYNDIAVTKSSWEELVRDSFGGYRNASA YCLMYINDKAQFLIQEEFN/K/ETGQPLVGIETLPPDLRDFVE EDNQRFEKELEEWDAQLAQKALQEKLLASQKLRESETSVTTAQ AAGDPKYLEQPSRSDFSKHLKEETIQIITKASHEHEDKSPETV LQSAIKLEYARLVKLAQEDTPPETDYRLHHVVVYFIQNQAPKK IIEKTLLEQFGDRNLSFDERCHNIMKVAQAKLEMIKPEEVNLE EYEEWHQDYRKFRETTMYLIIGLENFQRESYIDSLLFLICAYQ NNKELLSKGLYRGHDEELISHYRRECLLKLNEQAAELFESGED REVNNGLIIMNEFIVPFLPLLLVDEMEEKDILAVEDMRNRWCS YLGQEMEPHLQEKLTDFLPKLLDCSMEIKSFHEPPKLPSYSTH ELCERFARIMLSLSRTPADGR
402	1141	1	465	AQVYVRMDSFDEDLARPSGLLAQERKLCRDLVHSNKKEQEFRS IFQHIQSAQSQRSPSELFAQHM\VPIVHHVKEHHFGSSGMTLH ERFT\KYLKRG\TEQEAAKNKKSPEIHRRIDISPSTFRKHGLA HDEMKSPREPGYKDGHNSKNELQRVNFY
403	1142	2	369	TYTFCFSLMI\ILLTIIQGLILEAFGELRDQLDQVKEDMETKC FICGIGNDYFDTVPHGFETHTLQEHNLANYLFFLMYLINKDET EHTGQESYVWKMYQERCWEFFPAGDCFRKQYEDQLN
404	1143	3115	557	FRRKGGGGPKDFGAGLKYNSRHEKVNGLEEGVEFLPVNNVKKV EKHGPGRWVVLAAVLIGLLLVLLGIGFLVWHLQYRDVRVQKVF NGYMRITNENFVDAYENSNSTEFVSLASKVKDALKLLYSGVPF LGPYHKESAVTAFSEGSVIAYYWSEFSIPQHLVEEAERVMAEE RVVMLPPRARSLKSFVVTSVVAFPTDSKTVQRTQDNSCSFGLH ARGVELMRFTTPGFPDSPYPAHARCQWALRGDADSVLSLTFRS FDLASCDERGRHLV\TVYNT\LSPMEPHA\LVQLCGTYPPSYN LTFHS\S\QNVLLITLITNTERRHPG\FEATFFQLPRMSSCGG RLRKAQGTFNSPYYPGHYPPNIDCTWNIEVPNNQHVKVRFKFF YLLEPGVPAGTCPKDYVEINGEKYCGERSQFVVTSNSNKITVR FHSDQSYTDTGFLAEYLSYDSSDPCPGQFTCRTGRCIRKELRC DGWADCTDHSDELNCSCDAGHQFTCKNKFCKPLFWVCDSLNDC GDNSDEQGCSCP\AQTFRCSNGKCLSKSQQCNGKDDCGDGSDE ASCPKVNVVTCTKHTYRCLNGLCLSKGNPECDGKEDCSDGSDE KDCDCGLRSFTRQARVVGGTDADEGEWPWQVSLHALGQGHICG ASLISPNWLVSAAHCYIDDRGFRYSDPTQWTAFLGLHDQSQRS APGVQERRLKRIISHPFFNDFTFDYDIALLELEKPAEYSSMVR PICLPDASHVFPAGKAIWVTGWGHTQYGGTGALILQKGEIRVI NQTTCENLLPQQITPRMMCVGFLSGGVDSCQGDSGGPLSSVEA DGRIFQAGVVSWGDGCAQRNKPGVYTRLPLFRDWIKENTGV

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405	1144	1	424	RHEEDLGNLWENTRFTDCSFFVRGQEFKAHKSVLAARSPVFNA MFEHEMEESKKNRVEINDLDPEVFKEMMRFIYTGRAPNLDKMA DNLLAAADKYALERLKVMCEKALCSNLSVENVADTLVLADLHS \AEQLKAQAIDFINRCSVLRQLGCKDGKNWNSNQATDIMETSG GKSMIQSHPHLVAEAFRALASAQGPQFGIPRKRLKQS*NLGNL WENTRFTDCSFFVRGQEFKAHKSVLAARSPVFNAMFEHEMEES KKNRVEINDLDPEVFKEMMRFIYTGRAPNLDKMADNLLAAADK YALERLKVMCEKALCSNLSVENVADTLVLADLHSGRTVESTSH RLY
406	1145	1	1021	QRGGIPGKFQEDSGSVDWALGPFWGIFQADFGCMRFYLSAQTS DPVLRM*WGPSPISHPTSLCPGGGGAGQTTGSLCLGQQCCPLS CPNIPSRHKRWRL*AALVAGSRGSCTLRS*R*RTPLPVTRNLP R/CHLHLHPTGDLRVHVHQHCLLHGHVPPGAALLQCGGCDLRG EAAGLLFLGHACLRGSVNLRRDQWLPV\PYSRLCFSGAREGHL PSLLAMIHVRHCTPIPALLVC\PIKVNLLIPVAYLVFWAFLLV FSFISEHMVCGVGVIIILTGVPIFFLGVFWRSKPKCVHRLTES MTHWGQELCFVVYPQDAPEEEENGPCPPSLLPATDKPSKPQ
407	1146	2	1280	AAALVAEYLALLEDHRHLPVGCVSFQNISSNVLEESAISDDIL SPDEEGFCSGKHFTELGLVGLLEQAAGYFTMGGLYEAVNEVYK NLIPILEAHRDYKKLAAVHGKLQEAFTKIMHQSSGWERVFGTY FRVGFYGAHFGDLDEQEFVYKEPSITKLAEISHRLEEFYTERF GDDVVEIIKDSNPVDKSKLDSQKAYIQITYVEPYFDTYELKDR VTYFDRNYGLRTFLFCTPFTPDGRAHGELPEQHKRKTLLSTDH AFPYIKTRIRVCHREETVLTP\VEVAIEDMQKKTRELAFATEQ DPPDAKMLQMVLQGSVGPTVNQGPLEVAQVFLAEIPEDPKLFR HHNKLRLCFKDF*KKCEDALRKNKALIGPDQKEYHRELERNY CRLREALQPLLTQRLPQLMAPTPPGLRNSLNRASFRKADL
408	1147	55	651	GEGQQWQSTPLSPLQPTVADFLNLAWWTSAAAW*VLSGRWVEK VLPGREGSEEK*GMASSSADHLHSAPRALQ\SLFQQLLYGLIY HSWFQAGR*GFGGASSSPGPQSELRRLHGEGGVYD*GRPETLP GSVGGAEALWALADPAEAEGSPETRESSCVMKQTQYYFGSVNA SYNAIIDCGNCSRCWQWGGTRGQGRNL
409	1148	1855	904	VAGIPACFDN/FTEALAETACRQMGYSSKPTFRAVEIGPDQDL DVVEITENSQELRMRNSSGPCLSGSLVSLHCLACGESLKTPRV VGGEEASVDSWPWQVSIQYDKQHVCGGSILDPHWVLTAAHCFR KHTDVFNWKVRAGSDKLGSFPSLAVAKIIIIEFNPMYPKDNDI ALMKLQFPLTFSGTVRPICLPFFDEELTPATPLWIIGWGFTKQ NGGKMSDILLQASVQVIDSTRCNADDAYQGEVTEKMMCAGIPE GGVDTCQGDSGGPLMYQSDQWHVVGIVSWGYGCGGPSTPGVYT KVSAYLNWIYNVWKAEL

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410	1149	3	964	TISTVRWNSRIGMVLGVAIQKRAV\PGLY\AFEEAYARADKEA PRPCHKGSWCSSNQLCRECQAFMAHTMPKLKAFSMSSAYNAYR AVYAVAHGLHQLLGCASGACSRGRVYPWQLLEQIHKVHFLLHK DTVAFNDNRDPLSSYNIIAWDWNGPKWTFTVLGSSTWSPVQLN INETKIQWHGKDNQVPKSVCSSDCLEGHQRVVTGFHHCCFECV PCGAGTFLNKS/SYLGKDLPENYNEAKCVTFSLLFNFVSWIAF FTTASVYDGKYLPAANMMAGLSSLSSGFGGYFLPKCYVILCRP DLNSTEHFQASIQDYTRRCGST
411	1150	2	1378	VARGAFHPKMGPSFPSPKPGSERLSFVSAKQSTGQDTEAELQD ATLALHGLTVEDEGNYTCEFATFPKGSVRGMTWLRVIAKPKNQ AEAQKVTFSQDPTTVALCISKEGRPPARISWLSSLDWEAKETQ VSGTLAGTVTVTSRFTLVPSGRADGVTVTCKVEHESFEEPALI PVTLSVRYPPEVSISGYDDNWYLGRTDATLSCDVRSNPEPTGY DWSTTSGTFPTSAVAQGSQLVIHAVDSLFNTTFVCTVTNAVGM GRAEQVIFVRETPNTAGAGATGGIIGGIIAAIIATADA\TGIL ICRQQRKEQTLQGAEEDEDLEGPPSYKPPTPKAKLEAQEMPSQ LFTLGASEHSPLKTPYFDAGASCTEQEMPRYHELPTLEERSGP LHPGATSLGSPIPVPPGPPAVEDVSLDLEDEEGEEEEEYLDKI NPIYDALSYSSPSDSYQGKGFVMSRAMYV
412	1151	1	1828	GTRLREDKNHNMYVAGCTEVEVKSTEEAFEVFWRGQKKRRIAN THLNRESSRSHSVFNIKLVQAPLDADGDNVLQEKEQITISQLS LVDLAGSERTNRTRAEGNRLREAGNINQSLMTLRTCMDVLREN QMYGTNKMVPYRDSKLTHLFKNYFDGEGKVRMIVCVNPKAEDY EENLQVMRFAEVTQEVEVARPVDKAICGLTPGRRYRNQPRGP\ IGNEPLVTDVVLQSFPPLPSCEILDINDEQTLPRLIEALEKRH NLRQMMIDEFNKQSNAFKALLQEFDNAVLSKENHMQGKLNEKE KMISGQKLEIERLEKKNKTLEYKIEILEKTTTIYEEDKRNLQQ ELETQNQKLQRQFSDKRRLEARLQGMVTETTMKWEKECERRVA AKQLEMQNKLWVKDEKLKQLKAIVTEPKTEKPERPSRERDREK VTQRSVSPSPVPLLFQPDQNAPPIRLRHRRSRSAGDRWVDHKP ASNMQTETVMQPHVPHAITVSVANEKALAKCEKYMLTHQELAS DGEIETKLIKGDIYKTRGGGQSVQFTDIETLKQESPNGSRKRR SSTVAPAQPDGAESEWTDVETRCSVAVEMRAGSQLGPGYQHHA QPKRKKP
413	1152	1	336	PFSSSSVSSKGSDPFGTLDPFGSGSFNSAEGFADFSQMS/KGK STPVSQLGSADFPEAPDPFQPLGADSGDPFQSKKGFGDPFSGK DPFVPSSAAKPSKASASGFADFTSVS

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414	1153	1	1334	MSLMVVSMACVGLFLVQRAGPHMGGQDKPFLSAWPSAVVPRGG HVTLRCHYRHRFNNFMLYKEDRIHIPIFHGRIFQESFNMSPVT TAHAGNYTCRGSHPHSPTGWSAPSNPVVIMVTGNHRKPSLLAH PGPLVKSGERVILQCWSDIMFEHFFLHKEGISKDPSRLVGQIH DGVSKANFSIGPMMQDLAGTYRCYGSVTHSPYQLSAPSDPLDI VITGLYEKPSLSAQPGPTVLAGESVTLSCSSRSSYDMYHLSRE GEAHERRFSAGPKVNGTFQADFPLGPATHGGTYRCFGSFRDSP YEWSNSSDPLLVSVTGNPSNSWPSPTEPSSETGNPRHLHVLIG TSVVIILFILLLFFLLHRWCSN\KKNAAVMDQESAGNRTANSE DSDEQDPQEVTYTQLNHCVFTQRKITRPSQRPKTPPTDIIVYT ELPNAESRSKVVSCP
415	1154	1	1570	MSLRVHTLPTLLGAVVRPGCRELLCLLMITVTVGPGASGVCPT ACICATDIVSCTNKNLSKVPGNLFRLIKRLDLSYNRIGLLDSE WIPVSFAKLNTLILRHNNITSISTGSFSTTPNLKCLDLSSNKL KT\VKNAVFQELKVLEVLLLYNNHISYLDPSAFGGLSQLQKLY LSGNFLTQFPMDLYVGRFKLAELMFLDVSYNRIPSMPMHHINL VPGKQLRGIYLHGNPFVCD\CSLVSLLVFWYRRHFSSVMDFKN DYTCRLWSDSRHSRQVLLLQDSFMNCSDSIINGSFRALGFIHE AQVGERLMVHCDSKTGNANTDFIWVGPDNRLLEPDKEMENFYV FHNGSLVIESPRFEDAGVYSCIAMNKQRLLNETVDVTINVSNF TVSRSHAHEAFNTAFTTLAACVASIVLVLLYLYLTPCPCKCKT KRQKNMLHQSNAHSSILSPGPASDASADERKAGAGKRVVFLEP LKDTAAGQNGKVRLFPSEAVIAEGILKSTRGKSDSDSVNSVFS DTPFVAST
416	1155	2	1928	ASDFIRSLDHCGYLSLEGVFSHKFDFELQDVSSVNEDVLLTTG LLCKYTAQRFKPKYKFFHKSFQEYTAGRRLSSLLTSHEPEEVT KGNGYLQKMVSISDITSTYSSLLRYTCGSSVEATRAVMKHLAA VYQHGCLLGLSIAKRPLWRQESLQSVKNTTEQEILKAININSF VECGIHLYQESTSKSALSQEFEAFFQGKSLYINSGNIPDYLFD FFEHLPNCASALDFIKLGFYGGAMASWEKAAEDTGGIHMEEAP ETYIPSRAVSLFFNWKQEFRTLEVTLRDFSKLNKQDIRYLGKI FSSATSLRLQIKRCAGVAGSLSLVLSTCKNIYSLMVEASPLTI EDERHITSVTNLKTLSIHDLQNQRLPGGLTDSLGNLKNLTKLI MDNIKMNEEDAIKLAEGLKNLKKMCLFHLTHLSDIGEGMDYIV KSLSSEPCDLEEIQLVSCCLSANAVKILAQNLHNLVKLSILDL SENYLEKDGNEALHELIDRMNVLEQLTALMLPWGCDVQGSLSS LLKHLEEVPQLVKLGLKNWRLTDTEIRILGAFFGKNPLKNFQQ LNLAGNRVSSDGWLAFMGVFENLKQLVFFDFSTKEFLPDPALV RKLSQVLSKLTFLQEARLVGWQFDDDDLSVITGAFKLVTA
417	1156	342	718	ASDRKVAMTCDCFWFRTMLDQHASCMEVGTERERQAG\GLVMF DPSGFPTGEKVLQDDEFTCDLFRFLQLLCEGHNSGL*VPGTSD DTKA*IMFSSQ**QEPVSSNYASF*RQQIILEHGSALGSG

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418	1157	1	135	EITHIVGETAAFLCPRLRLRRGGKDGSPKPGFLASVIPVDRRP GE*DITHIVGETAAFLCPRLRLRRGGKDGSPKPGFLASVIPVD RRPGE　　　　　　　　　　　　　　　　　　\
419	1158	173	943	SKFIFYVDSQSMIFFFQTPTRHKVLIMEFCPCGSLYTVLEEPS NAYGLPESEFLIVLRDVVGGMNHLRENGIVHRDIKPGNIMRVI GEDGQSVYKLTDFGAARELEDDEQFVSLYGTEEYLHPDMYERA VLRKDHQ\KKYGAT\VDLW\SIGVTFYQGKPTGS\LAI*HPFE GASVRNKASDGIKIITGKGLLGAIS\GVQKSKKNG\PI\DWEW EDMPVSCSPSSGVLRVPNLPPVLA\NILESRSRKKCWGF*PSF LQEN
420	1159	987	500	GSTISCERSLRSLWTAHWALPEMDSRIPYDDYPVVFLPAYENP PAWIPPHERVHHPDYNNELTQFLPRTITLKKPPGAQLGFNIRG GKASQLGIFISKVIPDSDAHRAGLQEGDQVLAVNDVDFQDIEH SKAVEILKTAREISMRVRFFPYNYHRQKERTVH
421	1160	3	890	HEQVSALHRRIKAIVEVAAMCGVNIICFQEAWTMPFAFCTREK LPWTEFAESAEDGPTTRFCQKLAKNHDMVVVSPILERDSEHGD VLWNTAVVISNSGAVLGKTRKNHIPRVGDFNESTYYMEGNLGH PVFQTQFGRIAVNICYGRHHPLNWLMYSINGAEIIFNPSATIG ALSESLWPIEARNAAIANHCFTCAINRVGTEHFPNEFTSGDGK KAHQDFGYFYGSSYVAAPDSSRTPGLSRSRDGLLVAKLDLNLC QQVNDVWNFKMTGRYEMYARELAEAVKSNYSPTIVKE

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422	1161	5214	352	MAKSGGCGAGAGVGGGNGALTWVNNAAKKEESETANKNDSSKK LSVERVYQKKTQLEHILLRPDTYIGSVEPLTQFMWVYDEDVGM NCREVTFVPGLYKIFDEILVNAADNKQRDKNMTCIKVSIDPES NIISIWNNGKGIPVVEHKVEKVYVPALIFGQLLTSSNYDDDEK KVTGGRNGYGAKLCNIFSTKFTVETACKEYKHSFKQTWMNNMM KTSEAKIKHFDGEDYTCITFQPDLSKFKMEKLDKDIVALMTRR AYDLAGSCRGVKVMFNGKKLPVNGFRSYVDLYVKDKLDETGVA LKVIHELANERWDVCLTLSEKGFQQISFVNSIATTKGGRHVDY VVDQVVGKLIEVVKKKNKAGVSVKPFQVKNHIWVFINCLIENP TFDSQTKENMTLQPKSFGSKCQLSEKFFKAASNCGIVESILNW VKFKAQTQLNKKCSSVKYSKIKGIPKLDDANDAGGKHSLECTL ILTEGDSAKSLAVSGLGVIGRDRYGVFPLRGKILNVREASHKQ IMENAEINNIIKIVGLQYKKSYDDAQSLKTLRYGKIMIMTDQD QDGSHIKGLLINFIHHNWPSLLKHGFLEEFITPIVKASKNKQE LSFYSIPEFDEWKKHIENQKAWKIKYYKGLGTSTAKEAKEYFA DMERHRILFRYAGPEDDAAITLAFSKKKIDDRKEWLTNFMEDR RQRRLHGLPEQFLYGTATKHLTYNDFINKELILFSNSDNERSI PSLVDGFKPGQRKVLFTCFKRNDKREVKVAQLAGSVAEMSAYH HGEQALMMTIVNLAQNFVGSNNINLLQPIGQFGTRLHGGKDAA SPRYIFTMLSTLARLLFPAVDDNLLKFLYDDNQRVEPEWYIPI IPMVLINGAEGIGTGWACKLPNYDAREIVNNVRRMLDGLDPHP MLPNYKNFKGTIQELGQNQYAVSGEIFVVDRNTVEITELPVRT WTQVYKEQVLEPMLNGTDKTPALISDYKEYHTDTTVKFVVKMT EEKLAQAEAAGLHKVFKLQTTLTCNSMVLFDHMGCLKKYETVQ DILKEFFDLRLSYYGLRKEWLVGMLGAEFTKLNNQARFILEKI QGKITI*NRSKKDLIQMLVQRGYESDPVKAWKEAQEKAAEEDE TQNQHDDSSSDSGTPSGPDFNYILNMSLWSLTKEKVEELIKQR DAKGREVNDLKRKSPSDLWKEDLAAFVEELDKVESQEREDVLA GMSGKAIKGKVGKPKVKKLQLEETMPSPYGRRIIPEITAMKAD ASKKLLKKKKGDLDTAAVKVEFDEEFSGAPVEGAGEEALTPSV PINKGPKPKREKKEPGTRVRKTPTSSGKPSAKKVKKRNPWSDD ESKSESDLEETEPVVIPRDSLLRRAAAERPKYTFDFSEEEDDD ADDDDDDNNDLEELKVKASPITNDGEDEFVPSDGLDKDEYTFS PGKSKATPEKSLHDKKSQDFGNLFSFPSYSQKSEDDSAKFDSN EEDSASVFSPSFGLKQTDKVPSKTVAAKKGKPSSDTVPKPKRA PKQKKVVEAVNSDSDSEFGIPKKTTTPKGKGRGAKKRKASGSE NEGDYNPGRKTSKTTSKKPKKTSFDQDSDVDIFPSDFPTEPPS LPRTGRARKEVKYFAESDEEEDDVDFAMFN
423	1162	1	219	KGCLAASFNCIFLYTGELYPTMIR*VEA*WENDSLFLGKDILL CTGQTPELNQVHPSPKAPPNTHHCKAHSSH

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424	1163	1454	446	ENSFECKDCGKAFSRGYQLSHHQKIHTGEKPYECKECKKAFRW GNQLTQHQKIHTGEKPYECKDCGKAFRWGSSLVIHKRIHTGEK PYECKDCGKAFRRGDELTQHQRFHTGEKDYECKDCGKTFSRVY KLIQHKRIHSGEKPYECKDCGKAFICGSSLIQHKRIHTGEKPY ECQECGKAFTRVNYLTQHQKIHTGEKPHECKECGKAFRWGSSL VKHERIHTGEKPYKCTECGKAFNCGYHLTQHERIHTGETPYKC KECGKAFIYGSSLVKHERIHTGVKPYGCTECGKSFSHGHQLTQ HQKTHSGAKSYECKECGKACNHLNHLREHQRIHNS
425	1164	826	407	HQYLDDLYPLHVMTILLKSHFFTMLKRPVGSSSFASLPFYHQS ILLRKNQMKRKKTQQDLTHINWTLQAVSIQTCIWLQKKPSSYF HQLPNQVL*PENSGPESCLYDLAAVVVHHGSG
426	1165	464	29	XLDPDTLPAVATLLMDVMFYSNGVKDPMATGDDCGHIRFFSFS LIEGYISLVMDVQTQQRFPSNLLFTSASGELWKMVRIGGQPLG FGPVWESGPTGPTSPLILPVTPSSSHRQAASQVTTTKQGQWLC LKRPSARSPDHTACLG*
427	1166	649	901	EAPLTSVCFSLERRFGSSSNTTSFGTLASQNAPTFGSLSQQTS GFGTQSSGFSGFGSGTGGFSFGSNNS*VSPFLSLTLIKSIK
428	1167	3	340	EEPQGSPIWVWLAGSLTSVSCFLPFQRMRIKPHQGQYIGEMSF LQHHKGECRPQKD*ARQENPCGPCSERRKHLLGQDPKTCKCSC KNTDSRCKARPLELNERTCRCDKPRR
429	1168	355	1312	TLWAGPGLCPQSHSSSSVPAPWEPHVERALRTDRNQGQRPLLS ASWAPAPARPLFLTSPVLLPKSRAIPAARDPS*AGIFCLLEMA GGQASVVIIGSAGVLGCRWGSSGKSHSLSPSRKGNLHLLSQEP QTTVVHNATDGIKGSTESCNTTTEDEDLKVRKQEIIKITEQLI EAINNGDFEAYTKICDPGLTSFEPEALGNLVEGMDFHKFYFEN REWVRAADILLPAPLPLCLCLLLTFSSQLPTFPLFDLRAALLL CMLVPLCPDGCRQAPLKALLLSSKCHSFCSCFVAVPVTTIKLT YFLPGAVAYACNPNTLGG
430	1169	439	728	ERAGAGGAAACRAGTRSGATSRTPWPLHRQLSMMLMLAQSNPQ LFALMGTRAGIARELERVEQQSRLEQLSAAELQSRNQGHWADW LQAYRARLGQ
431	1170	3	440	NGTLFIMVMHIKDLVSDYKE*WL*RKPLPW*EALLLRDCFFF* VTENGADPNPYVKTYLLPDNHKTSKRKTKISRKTRNPTFNEML VYSGYSKETLRQRELQLSVLSAESLRENFFLGGVTLPLKDFNL SKETVKWYQLTAATYL

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432	1171	433	1824	LHRIMQLAVVVSQVLENGSSVLVCLEEGWDITAQVTSLVQLLS DPFYRTLEGFQMLVEKEWLSFGHKFSQRSSLTLNCQGSGFAPV FLQFLDCVHQVHNQYPTEFEFNLYYLKFLAFHYVSNRFKTFLL DSDYERLEHGTLFDDKGEKHAKKGVCIWECIDRMHKRSPIFFN YLYSPLEIEALKPNVNVSSLKKWDYYIEETLSTGPSYDWMMLT PKHFPSEDSDLAGEAGPRSQRRTVWPCYDDVSCTQPDALTSLF SEIEKLEHKLNQAPEKWQQLWERVTVDLKEEPRTDRSQRHLSR SPGIVSTNLPSYQKRSLLHLPDSSMGEEQNSSISPSNGVERRA ATLYSQYTSKNDENRSFEGTLYKRGALLKGWKPRWFVLDVTKH QLRYYDSGEDTSCKGHIDLAEVEMVIPAGPSMGAPKHTSDKAF FDLKTSKRVYNFCAQDGQSAQQWMDKIQSCISDA
433	1172	1714	946	EVEGPRRVSPAPETLGMEESVVRPSVFVVDGQTDIPFTRLGRS HRRQSCSVARVGLGLLLLLMGAGLAVQGWFLLQLHWRLGEMVT RLPDGPAGSWEQLIQERRSHEVNPAAHLTGANSSLTGSGGPLL WETQLGLAFLRGLSYHDGALVVTKAGYYYIYSKVQLGGVGCPL GLASTITHGLYKRTPRYPEELELLVSQQSPCGRATSSSRVWWD SSFLGGVVHLEAGEEVVVRVLDERLVRLRDGTRSYFGAFMV
434	1173	16	367	QSAELGPRRREGSRRPSCTKASKPWRRRPGGPTSGLG*GPLSP GPYQCRPSLPAQLYPQSLMAAATLRTPTQVSAASSRPHTPSPT HVLKPSVRGACSSPRCPGSGTLRRSWVGPFF
435	1174	27	1139	LWWPPLSRHAAHRQWPGPTAPRGLGHKVKGRGASPAAMWSCSW FNGTGLVEELPACQDLQLGLSLLSLLGLVVGVPVGLCYNALLV LANLHSKASMTMPDVYFVNMAVAGLVLSALAPVHLLGPPSSRW ALWSVGGEVHVALQIPFNVSSLVAMYSTALLSLDHYIERALPR TYMASVYNTRHVCGFVWGGALLTSFSSLLFYICSHVSTRALEC AKMQNAEAADATLVFIGYVVPALATLYALVLLSRVRREDTPLD RDTGRLEPSAHRLLVATVCTQFGLWTPHYLILLGHTVIISRGK PVDAHYLGLLHFVKDFSKLLAFSSSFVTPLLYRYMNQSFPSKL QRLMKKLPCGDRHCSPDHMGVQQVLA
436	1175	322	756	SESELFTLMPSLPTTNCVHSLQMIPPLSPAPNQELVLGLCYMS YLAFLYMTFDFCCLYFSTVYAPSFKYICVHTDTHICVCVCIYL SSVVSKSSAEADGVLQPRRHPASLLIVFATSISESSLLIFSFQ KTEAKLIVFAVSLAAK
437	1176	2	153	FFFLRQSLTLSPRLECSGATSASPSAGITGMSHHSQPIVNFLR ACIPISK
438	1177	1	692	RQHAEERGRRNPKTGLTLERVGPESSPYLLRRHQRQGQEGEHY HSCVQLAPTRGLEES/GHGPL/SLAGGPRVGGV/AAAATEAPR MEWKVKVRSDGTRYVAKRPVRDRLLKARALKIREERSGMTTDD DAVSEMKMGRYWSKEERKQHLIRAREQRKRREFMMQSRLECLR EQQNGDSKPELNIIALSHRKTMKKRNKKILDNWITIQEMLAHG ARSADGKRVYNPLLSVTTV

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439	1178	2	616	SDRGCSAAAGRNMTAVGVQAQRPLGQRQPRRSFFESFIRTLII TCVALAVVLSSVSICDGHWLLAEDRLFGLWHPCTTTNQSVPIC FRDLGQAHVPGLAVGMGLVRSVGALAVVAAIFGLEFLMVSQLC EDKHSQCKWVMGSILLLVSFVLSSGGLLGFVILLRNQVTLIGF TLMFWCEFTASFLLFLNAISGLHINSITHPWE
440	1179	2	540	QILPNLYLGSARDSANLESLAKLGIRYILNVTPNLPNFFEKNG DFHYKQIPISDHWSQNLSRFFPEAIEFIDEALSQNCGVLVHCL AGVSRSVTVTVAYLMQKLHLSLNDAYDLVKRKKSNISPNFNFM GQLLDFERSLRLEERHSQEQGSGGQASAASNPPSFFTTPTSDG AFELAPT ·
441	1180	940	463	RKSLHENKLKRLQEKVEVLEAKKEELETENQVLNRQNVPFEDY TRLQKRLKDIQRRHNEFRSLILVPNMPPTASINPVSFQSSAMG SKHGTTISSSYAGGTTSKGTLSTSQKTRRTGNNTKKTTRGTWI FRRMMFLENRQIKRGEVGDSVKLDILTCGI
442	1181	1	986	GRPGAGASELFPSVTTDLSVSKQNACLTCVDFVTVHVCMGFWG IGPGALSTSCIPYPLSHGPGSVKAEMLHMYSQKDPLILCVRLA VLLAVTLTVPVVLFPIRRALQQLLFPGKAFSWPRHVAIALILL VLVNVLVICVPTIRDIFGVIGSTSAPSLIFILPSIFYLRIVPS EVEPFLSWPKIQALCFGVLGVLFMAVSLGFMFANWATGQSRMS GH*SGPAGPGPCAHAHGGVRAAP*GPSCPTCGGGWFP*TWLSE AGDSRGCRLAHFPPPQGCQAWIMALIPTPTPWEEEEEEEEEEE EEEEEEEEEARSWWSLCPAQSSLPPPG
443	1182	460	27	INELRYHLEESRDKNVLLCLEERDWDPGLAIIDNLMQSINQSK KTVFVLTKKYAKSWNFKTAFYLALQRLMDENMDVIIFILLEPV LQHSQYLRLRQRICKSSILQWPDNPKAEGLFWQTLRNVVLTEN DSRYNNMYVDSIKQY
444	1183	1682	230	DDPIKTSWTPPRYVLSMSEERHERVRKKYHILVEGDGIPPPIK SFKEMKFPAAILRGLKKKGIHHPTPIQIQGIPTILSGRDMIGI AFTGSGKTLVFTLPVIMFCLEQEKRLPFSKREGPYGLIICPSR ELARQTHGILEYYCRLLQEDSSPLLRCALCIGGMSVKEQMETI RHGVHMMVATPGRLMDLLQKKMVSLDICRYLALDEADRMIDMG FEGDIRTIFSYFKGQRQTLLFSATMPKKIQNFAKSALVKPVTI NVGRAGAASLDVIQEVEYVKEEAKMVYLLECLQKTPPPVLIFA EKKADVDAIHEYLLLKGVEAVAIHGGKDQEERTKAIEAFREGK KDVLVATDVASKGLDFPAIQHVINYDMPEEIENYVHRIGRTGR SGNTGIATTFINKACDESVLMDLKALLLEAKQKVPPVLQVLHC GDESMLDIGGERGCAFCGGLGHRITDCPKLEAMQTKQVSNIGR KDYLAHSSMDF
445	1184	1	375	IETTQPSEDTNANSQDNSMQPETSSQQQLLSPTLSDRGGSRQD AADAGKPQRKFGQWRLPSAPKPISHSVSSVNLRFGGRTTMKSV VCKMNPMTDAASCGSEVKKWWTRQLTVESDESGDDLLDI
446	1185	2	223	NDRFSACYFTLKLKEAAVRQREALKKLTKNIATDSYISVNLRD VYARSIMEMLRLKGRERASTRSSGGDDFWF

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447	1186	2	1031	FTVFILGITIRPLVEFLDVKRSNKKQQAVSEEIYCRLFDHVKT GIEDVCGHWGHNFWRDKFKKFDDKYLRKLLIRENQPKSSIVSL YKKLEIKHAIEMAETGMISTVPTFASLNDCREEKIRKVTSSET DEIRELLSRNLYQIRQRTLSYNRHSLTADTSERQAKEILIRRR HSLRESIRKDSSLNREHRASTSTSRYLSLPKNTKLPEKLQKRR TISIADGNSSDSDADAGTTVLNLQPRARRFLPEQFSKKSPQSY KMEWKNEVDVDSGRDMPSTPPTPHSREKGTQTSGLLQQPLLSK DQSGSEREDSLTEGIPPKPPPRLVWRASEPGSRKARFGSEKP
448	1187	3	444	HEEASGLSVWMGKQMEPLHAVPPAAITLILSLLVAVFTECTSN VATTTLFLPIFASMSRSIGLNPLYIMLPCTLSASFAFMLPVAT PPNAIVFTYGHLKVADMVKTGVIMNIIGVFCVFLAVNTWGRAI FDLDHFPDWANVTHIET
449	1188	3	125	HELENNWLQHEKAPTEEGKKELLALSNANPSLLERHCAYL
450	1189	1	188	GNIIYMYMQPGARSSQDQGKFLTLFYNIVTPLLNPLIYTLRNR EVKGALGRLLLGKRELGKE
451	1190	10	1879	PLEQRSNCRVDPRVRTHTMASDTSSLVQSHTYKKREPADVPYQ TGQLHPAIRVADLLQHITQMKCAEGYGFKEEYESFFEGQSAPW DSAKKDENRMKNRYGNIIAYDHSRVRLQTIEGDTNSDYINGNY IDGYHRPNHYIATQGPMQETIYDFWRMVWHENTASIIMVTNLV EVGRVKCCKYWPDDTEIYKDIKVTLIETELLAEYVIRTFAVEK RGVHEIREIRQFHFTGWPDHGVPYHATGLLGFVRQVKSKSPPS AGPLVVHCSAGAGRTGCFIVIDIMLDMAEREGVVDIYNCVREL RSRRVNMVQTEEQYVFIHDAILEACLCGDTSVPASQVRSLYYD MNKLDPQTNSSQIKEEFRTLNMVTPTLRVEDCSIALLPRNHEK NRCMDILPPDRCLPFLITIDGESSNYINAALMDSYKQPSAFIV TQHPLPNTVKDFWRLVLDYHCTSVVMLNDVDPAQLCPQYWPEN GVHRHGPIQVEFVSADLEEDIISRIFRIYNAARPQDGYRMVQQ FQFLGWPMYRDTPVSKRSFLKLIRQVDKWQEEYNGGEGRTVVH CLNGGGRSGTFCAISIVCEMLRHQRTVDVFHAVKTLRNNKPNM VDLLDQYKFCYEVALEYLNSG
452	1191	603	342	PLTYNKKYTYPWWGDALGWLLALSSMVCIPAWSLYRLGTLKGP FRERIRQLMCPAEDLPQRNPAGPSAPATPRTSLLRLTELESHC
453	1192	120	449	TLSESGALFSLGPPPLSLKSSSAPRPYSTLRDCLEHFAELFDL GFPNPLAERIIFETHQIHFANCSLGQPTFSDPPEDVLLAMIIA PICLIPFLITLVVWRSKDSEAQA
454	1193	1838	1066	CEEREQEKDDVDVALLPTIVEKVILPKLTVIAENMWDPFSTTQ TSRMVGITLKLINGYPSVVNAENKNTQVYLKALLLRMRRTLDD DVFMPLYPKNVLENKNSGPYLFFQRQFWSSVKLLGNFLQWYGI FSNKTLQELSIDGLLNRYILMAFQNSEYGDDSIKKAQNVINCF PKQWFMNLKGERTISQLENFCRYLVHLADTIYRNSIGCSDVEK RNARENIKQIVKLLASVRALDHAMSVASDHNVKEFKSLIEGK

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455	1194	112	1361	TPFCFLCSLVFRSRVWAEPCLIDAAKEEYNGVIEEFLATGEKL FGPYVWGRYDLLFMPPSFPFGGMENPCLTFVTPCLLAGDRSLA DVIIHEISHSWFGNLVTNANWGEFWLNEGFTMYAQRRISTILF GAAYTCLEAATGRALLRQHMDITGEENPLNKLRVKIEPGVDPD DTYNETPYEKGFCFVSYLAHLVGDQDQFDSFLKAYVHEFKFRS ILADDFLDFYLEYFPELKKKRVDIIPGFEFDRWLNTPGWPPYL PDLSPGDSLMKPAEELAQLWAAEELDMKAIEAVAISPWKTYQL VYFLDKILQKSPLPPGNVKKLGDTYPSISNARNAELRLRWGQI VLKNDHQEDFWKVKEFLHNQGKQKYTLPLYHAMMGGSEVAQTL AKETFASTASQLHSNVVNYVQQIVAPKGS
456	1195	1	889	CASGSSGWRPVLWAGAFTMASAELDYTIEIPDQPCWSQKNSPS PGGKEAETRQPVVILLGWGGCKDKNLAKYSAIYHKRGCIVIRY TAPWHMVFFSESLGIPSLRVLAQKLLELLFDYEIEKEPLLFHV FSNGGVMLYRYVLELLQTRRFCRLRVVGTIFDSAPGDSNLVGA LRALAAILERRAAMLRLLLLVAFALVVVLFHVLLAPITALFHT HFYDRLQDAGSRWPELYLYSRADEVVLARDIERMVEARLARRV LARSVDFVSSAHVSHLRDYPTYYTSLCVDFMR\NWVRC
457	1196	2	295	PRVRDRLPSTGVRDRKGDKPWKESGGSVEAPRMGFTHPPGHLS GCQSSLASGETGTGSADPPGGPRPGLTRRAPVKDTPGRAPAAD AAPAGPSSCLG
458	1197	1299	682	QGRTSCIGLYTYQRRICKYRDQYNWFFLARPTTFAIIENLKYF LLKKDPSQPFYLGHTIKSGDLEYVGMEGGIVLSVESMKRLNSL LNIPEKCPEQGGMIWKISEDKQLAVCLKYAGVFAENAEDADGK DVFNTKSVGLSIKEAMTYHPNQVVEGCCSDMAVTFNGLTPNQM HVMMYGVYRLRAFG\HIFNDALVFLPPNGSDND
459	1198	779	61	HEGKPTRGRGRGGSLSTRGRGSEVPDSAHLAPTPLFSESGCCG LRSRFLTDCKMEEGGNLGGLIKMVHLLVLSGAWGMQMWVTFVS GFLLFRSLPRHTFGLVQSKLFPFYFHISMGCAFINLCILASQH AWAQLTFWEASQLYLLFLSLTLATVNARWLEPRTTAAMWALQT VEKERGLGGEVPGSHQGPDPYRQLREKDPKYSALRQNFFRYHG LSSLCNLGCVLSNGLCLA\ALPWK
460	1199	517	815	KQLDKQLRADPSGSLPPLPPSPPPPLEAGGRPPEVP/PRGPSA VPSFPSVSGDWGGPVEAG/EGGQQGRGRARARPCSLPPLLPPS PVCRLSGSRAPLGCDG
461	1200	1	583	RNQLSSQKSVPWVPILKSLPLWAIVVAHFSYNWTFYTLLTLLP TYMKEILRFNVQENGFLSSLPYLGSWLCMILSGQAADNLRAKW NFSTLCVRRIFSLIGMIGPAVFLVAAGFIGCDYSLAVAFLTIS TTLGGFCSSGFSINHLDIAPSYAGILLGITNTFATIPGMVGPV IAKSLTPDMGISLHRPGWSAVA
462	1201	25	383	GPSGTTHASAHSGHPGSPRGSLSRHPSSQLAGPGVEGGEGTQK PRDYIILAILSCFCPMWPVNIVAFAYAVMSRNSLQQGDVDGAQ RLGRVAKLLSIVALVGGVLIIIASCVINLGVYK
463	1202	573	372	SLFLSFPPLSFKMTLNDAMRNKARLSITGSTGENGRVMTPEFP KAVHAVPYVSPGMGMNVSVTDLS

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464	1203	2018	491	DDVPPPAPDLYDVPPGLRRPGPGTLYDVPRERVLPPEVADGGV VDSGVYAVPPPAEREAPAEGKRLSASSTGSTRSSQSASSLEVA GPGREPLELEVAVEALARLQQGVSATVAHLLDLAGSAGATGSW RSPSEPQEPLVQDLQAAVAAVQSAVHELLEFARSAVGNAAHTS DRALHAKLSRQLQKMEDVHQTLVAHGQALDAGRGGSGATLEDL DRLVACSRAVPEDAKQLASFLHGNASLLFRRTKATAPGPEGGG TLHPNPTDKTSSIQSRPLPSPPKFTSQDSPDGQYENSEGGWME DYDYVHLQGKEEFEKTQKELLEKGSITRQGKSQLELQQLKQFE RLEQEVSRPIDHDLANWTPAQPLAPGRTGGLGPSDRQLLLFYL EQCEANLTTLTNAVDAFFTAVATNQPPKIFVAHSKFVILSAHK LVFIGDTLSRQAKAADVRSQVTHYSNLLCDLLRGIVATTKAAA LQYPSPSAAQDMVERVKELGHSTQQFRRVLGQLAAA
465	1204	299	189	EMEEPQKSYVNTMDLERDEPLKSTGPQISVSEFSCHCCYDILV NPTTLNCGHSFCRHCLALWWASSKKTECPECREKWEGFPKVSI LLRDAIEKLFPDAIRLRFEDIQQNNDIVQSLAAFQKYGNDQIP LAPNTGRANQQMGGGFFSGVLTALTGVAVVLLVYHWSSRESEH DLLVHKAVAKWTAEEVVLWLEQLGPWASLYRERFLSERVNGRL LLTLTEEEFSKTPYTIENSSHRRAILMELERVKALGVKPPQNL WEYKAVNPGRSLFLLYALKSSPRLSLLYLYLFDYTDTFLPFIH TICPLQEDSSGEDIVTKLLDLKEPTWKQWREFLVKYSFLPYQL IAEFAWDWLEVHYWTSRFLIINAMLLSVLELFSFWRIWSRSEL K*VGFRFLRLGVAALGSVEVAGLRGVVKGERPLLYGHGAGARF PHSVLLLPVAKPLPLPLLPRGLC
466	1205	2	242	EKARMIYEDYISILSPKEVSLDSRVREVINRNLLDPNPHMYED AQLQIYTLMHRDSFPRFLNSQIYKSFVESTAGSSSES
467	1206	2	619	LYYSQDEESKIMISDFGLSKMEGKGDVMSTACGTPGYVAPEVL AQKPYSKAVDCWSIGVIAYILLCGYPPFYDENDSKLFEQILKA EYEFDSPYWDDISDSAKDFIRNLMEKDPNKRYTCEQAARHPWI AGDTALNKNIHESVSAQIRKNFAKSKWRQAFNATAVVRHMRKL HLGSSLDSSNASVSSSLSLASQKDCASGTFHAL
468	1207	1	352	RTRGGAVSFEDFIKGLSILLRGTVQEKLNWAFNLYDINKDGYI TKEEMLDIMKAIYDMMGKCTYPVLKEDAPRQHVETFFQKMDKN KDGVVTIDEFIESCQKDENIMRSMQLFENVI
469	1208	3	1015	PRSPEHHTPAWHEGRSLGPIMASMADRNMKLFSGRVVPAQGEE TFENWLTQVNGVLPDWNMSEEEKLKRLMKTLRGPAREVMRVLQ ATNPNLSVADFLRAMKLVFGESESSVTAHGKFFNTLQAQGEKA SLYVIRLEVQLQNAIQAGIIAEKDANRTRLQQLLLGGELSRDL RLRLKDFLRMYANEQERLPNFLELIKMVREEEDWDDAFIKRKR PKRSESMVERAVSPVAFQGSPPIVIGSADCNVIEIDDTLDDSD EDVILVESQDPPLPSWGAPPLRDRARPQDEVLVIDSPHNSRAQ FPSTSGGSGYKNNGPGEMRRARKRKHTIRCSYCGEE
470	1209	1543	1351	SVACTVPLRSMSDPDQDFDKEPDSDSTKHSTPSNSSNPSGPPS PNSPHRSQLPLEGLEQPACDT

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471	1210	3	952	YSAVEFAERGSGGSSGDELREDDEPVKKRGRKGRGRGPPSSSD SEPEAELEREAKKSAKKPQSSSTEPARKPGQKEKRVRPEEKQQ AKPVKVERTRKRSEGFSMDRKVEKKKEPSVEEKLQKLHSEIKF ALKVDSPDVKRCLNALEELGTLQVTSQILQKNTDVVATLKKIR RYKANKDVMEKAAEVYTRLKSRVLGPKIEAVQKVNKAGMEKEK AEEKLAGEELAGEEAPQEKAEDKPSTDLSAPVNGEATSQKGES AEDKEHEEGRDSEEGPRCGSSEDLHDSVREGPDLDRPGSDRQE RERARGDSEALDEES
472	1211	5204	2901	LAELSSLSVLRLSHNSISHIAEGAFKGLRSLRVLDLDHNEISG TIEDTSGAFSGLDSLSKLTLFGNKIKSVAKRAFSGLEGLEHLN LGGNAIRSVQFDAFVKMKNLKELHISSDSFLCDCQLKWLPPWL IGRMLQAFVTATCAHPESLKGQSIFSVPPESFVCDDFLKPQII TQPETTMAMVGKDIRFTCSAASSSSSPMTFAWKKDNEVLTNAD MENFVHVHAQDGEVMEYTTILHLRQVTFGHEGRYQCVITNHFG STYSHKARLTVNVLPSFTKTPHDITIRTTTMARLECAATGHPN PQIAWQKDGGTDFPAARERRMHVMPDDDVFFITDVKIDDAGVY SCTAQNSAGSISANATLTVLETPSLVVPLEDRVVSVGETVALQ CKATGNPPPRITWFKGDRPLSLTERHHLTPDNQLLVVQNVVAE DAGRYTCEMSNTLGTERAHSQLSVLPAAGCRKDGTTVGIFTIA VVSSIVLTSLVWVCIIYQTRKKSEEYSVTNTDETVVPPDVPSY LSSQGTLSDRQETVVRTEGGPQANGHIESNGVCPRDASHFPEP DTHSVACRQPKLCAGSAYHKKPWKAMEKAEGTPGPHKMEHGGR VVCSDCNTEVDCYSRGQAFHPQPVSRDSAQPSAPNGPEPGGSD QEHSPHHQCSRTAAGSCPECQGSLYPSNHDRMLTAVKKKPMAS LDGKGDSSWTLARLYHPDSTELQPASSLTSGSPERAEAQYLLV SNGHLPKACDASPESTPLTGQLPGKQRVPLLLAPKS

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473	1212	2	2466	AAAGAARRVSVRCGRSGPGPGRGAAGLSPADIALASEQGASCS VRAPERKLRMKLLWQAKMSSIQDWGEEVEEGAVYHVTLKRVQI QQAANKGARWLGVEGDQLPPGHTVSQYETCKIRTIKAGTLEKL VENLLTAFGDNDFTYISIFLSTYRGFASTKEVLELLLDRYGNL TSPNCEEDGSQSSSESKMVIRNAIASILRAWLDQCAEDFREPP HFPCLQKLLDYLTRMMPGSDPERRAQNLLEQFQKQEVETDNGL PNTISFSLEEEEELEGGESAEFTCFSEDLVAEQLTYMDAQLFK KVVPHHCLGCIWSRRDKKENKHLAPTIRATISQFNTLTKCVVS TILGGKELKTQQRAKIIEKWINIAHECRLLKNFSSLRAIVSAL QSNSIYRLKKTWAAVPRDRMLMFEELSDIFSDHNNHLTSRELL MKEGTSKFANLDSSVKENQKRTQRRLQLQKDMGVMQGTVPYLG TFLTDLTMLDTALQDYIEGGLINFEKRRREFEVIAQIKLLQSA CNSYCMTPDQKFIQWFQRQQLLTEEESYALSCEIEAAADASTT SPKPWKSMVKRLNLLFLGADMITSPTPTKEQPKSTASGSSGES MDSVSVSSCESNHSEAEEGYITPMDTPDEPQKKLSESSSYCSS IHSMDTNFLQGMSSLINPLSSPPSCNNNPKIHKRSVSVTSITS TVLPPVYNQQNEDTCIIRISVEDNNGNMYKSIMLTSQDKTPAV IQRAMLKHNLDSDPAEEYELVQVISEDKELVIPDSANVFYAMN SQVNFDFILRKKNSMEEQVKLRSRTSLTLPRTAKRGCWSNRHS KITL
474	1213	1	867	AREKMDSCIEAFGTTKQKRALNTRRMNRVGNESLNRAVAKAAE TIIDTKGVTALVSDAIHNDLQDDSLYLPPCYDDAAKPEDVYKF EDLLSPAEYEALQSPSEAFRNVTSEEILKMIEENSHCTFVIEA LKSLPSDVESRDRQARCIWFLDTLIKFRAHRVVKRKSALGPGV PHIINTKLLKHFTCLTYNNGRLRNLISDSMKAKITAYVIILAL HIHDFQIDLTVLQRDLKLSEKRMMEIAKAMRLKISKRRVSVAA GSEEDHKLGTLSLPLPPAQTSDRLAKRRKIT

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475	1214	2	2621	LSLFGSRALGRSGARAMAKAKKVGARRKASGAPAGARGGPAKA NSNPFEVKVNRQKFQILGRKTRHDVGLPGVSRARALRKRTQTL LKEYKERDKSNVFRDKRFGEYNSNMSPEEKMMKRFALEQQRHH EKKSIYNLNEDEELTHYGQSLADIEKHNDIVDSDSDAEDRGTL SGELTAAHFGGGGGLLHKKTQQEGEEREKPKSRKELIEELIAK SKQEKRERQAQREDALELTEKLDQDWKEIQTLLSHKTPKSENR DKKEKPKPDAYDMMVRELGFEMKAQPSNRMKTEAELAKEEQEH LRKLEAERLRRMLGKDEDENVKKPKHMSADDLNDGFVLDKDDR RLLSYKDGKMNVEEDVQEEQSKEASDPESNEEEGDSSGGEDTE ESDSPDSHLDLESNVESEEENEKPAKEQRQTPGKGLISGKERA GKATRDELPYTFAAPESYEELRSLLLGRSMEEQLLVVERIQKC NHPSLAEGNKAKLEKLFGFLLEYVGDLATDDPPDLTVIDKLVV HLYHLCQMFPESASDAIKFVLRDAMHEMEEMIETKGRAALPGL DVLIYLKITGLLFPTSDFWHPVVTPALVCLSQLLTKCPILSLQ DVVKGLFVCCLFLEYVALSQRFIPELINFLLGILYIATPNKAS QGSTLVHPFRALGKNSELLVVSAREDVATWQQSSLSLRWASRL RAPTSTEANHIRLSCLAVGLALLKRCVLMYGSLPSFHAIMGPL RALLTDHLADCSHPQELQELCQSTLTEMESQKQLCRPLTCEKS KPVPLKLFTPRLVKVLEFGRKQGSSKEEQERKRLIHKHKREFK GAVREIRKDNQFLARMQLSEIMERDAERKRKVKQLFNSLATQE GEWKALKRKKFKK
476	1215	3	961	LTKQEDCCGSIGTAWGQSKCHKCPQLQYTGVQKPGPVRGEVGA DCPQGYKRLNSTHCQDINECAMPGVCRHGDCLNNPGSYRCVCP PGHSLGPSRTQCIADKPEEKSLCFRLVSPEHQCQHPLTTRLTR QLCCCSVGKAWGARCQRCPTDGTAAFKEICPAGKGYHILTSHQ TLTIQGESDFSLFLHPDGPPKPQQLPESPSQAPPPEDTEEERG VTTDSPVSEERSVQQSHPTATTTPARPYPELISRPSPPTMRWF LPDLPPSRSAVEIAPTQVTETDECRLNQNICGHGECVPGPPDY SCHCNPGYRSHPQHRYCV

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477	1216	3652	1207	MAGGHCGSFPAAAAGSGEIVQLNVGGTRFSTSRQTLMWIPDSF FSSLLSGRISTLRDETGAIFIDRDPAAFAPILNFLRTKELDLR GVSINVLRHEAEFYGITPLVRRLLLCEELERSSCGSVLFHGYL PPPGIPSRKINNTVRSADSRNGLNSTEGEARGNGTQPVLSGTG EETVRLGFPVDPRKVLIVAGHHNWIVAAYAHFAVWYRIKESSG WQQVFTSPYLDWTIERVALNAKVVGGPHGDKDKMVAVASESSI ILWSVQDGGSGSEIGVFSLGVPVDALFFIGNQLVATSHTGKVG VWNAVTQHWQVQDVVPITSYDTAGSFLLLGCNNGSIYYIDMQK FPLRMKDNDLLVTELYHDPSNDAITALSVYLTPKTSVSGNWIE IAYGTSSGAVRVIVQHPETVGSGPQLFQTFTVHRSPVTKIMLS EKHLVSVCADNNHVRTWTVTRFRGMISTQPGSTPLASFKILSL EETESHGSYSSGNDIGPFGERDDQQVFIQKVVPITNKLFVRLS STGKRICEIQAVDCTTISSFTGRECEGSSRMGSRPRRYLFTGH TNGSIQMWDLTTAMDMVNKSEDKDVGGPTEEELLKLLDQCDLS TSRCATPNISPATSVVQHSHLRESNSSLQLQHHDTTHEAATYG SMRPYRESPLLARARRTESFHSYRDFQTINLNRNVERAVPENG NLGPIQAEVKGATGECNISERKSPGVEIKSLRELDSGLEVHKI AEGFSESKKRSSEDENENKIEFRKKGGFEGGGFLGRKKVPYLA SSPSTSDGGTDSPGTASPSPTKTTPSPRHKKSDSSGQEYSL
478	1217	1	1379	RRPTRPILTDELFKRTIQLPHLKTLILNGNKLETLSLVSCFAN NTPLEHLDLSQNLLQHKNDENCSWPETVVNMNLSYNKLSDSVF RCLPKSIQILDLNNNQIQTVPKETIHLMALRELNIAFNFLTDL PGCSHFSRLSVLNIEMNFILSPSLDFVQSCQEVKTLNAGRNPF RCTCELKNFIQLETYSEVMMVGWSDSYTCEYPLNLRGTRLKDV HLHELSCNTALLIVTIVVIMLVLGLAVAFCCLHFDLPWYLRML GQCTQTWHRVRKTTQEQLKRNVRFHAFISYSEHDSLWVKNELI PNLEKEDGSILICLYESYFDPGKSISENIVSFIEKSYKSIFVL SPNFVQNEWCHYEFYFAHHNLFHENSDHIILILLEPIPFYCIP TRYHKLKALLEKKAYLEWPKDRRKCGLFWANLRAAINVNVLAT REMYELQTFTELNEESRGSTISLMRTDCL
479	1218	1	1099	PTRPPTRPPTRPLLTPSWTSTGRMWSHLNRLLFWSIFSSVTCR KAVLDCEAMKTNEFPSPCLDSKTKVVMKGQNVSMFCSHKNKSL QITYSLFRRKTHLGTQDGKGEPAIFNLSITEAHESGPYKCKAQ VTSCSKYSRDFSFTIVDPVTSPVLNIMVIQTETDRHITLHCLS VNGSLPINYTFFENHVAISPAISKYDREPAEFNLTKKNPGEEE EYRCEAKNRLPNYATYSHPVTMPSTGGDSCPFCLKLLLPGLLL LLVVIILILAFWVLPKYKTRKAMRNNVPRDRGDTAMEVGIYAN ILEKQAKEESVPEVGSRPCVSTAQDEAKHSQELQYATPVFQEV APREQEACDSYKSGYVYSELNF
480	1219	1	293	FFFFEERRTGSHSVGHPRMEYSGVSMAHCSLNLLGSSNSPSSA SQDARTTGACQHAQLIGFFFF\VETASPQVTHAG/LKHLVSRN PSAVTSQSARIKT

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481	1220	1	727	NREGARKIQNKWLRPSPRSHRTPESVSPERYSYGTSSSSKRTE GSCRRRRQSSSSANSQQGQWETGSPPTKRQRRSRGRPSGGAKR RRRGAPAAPQQQSEPARPSSEGKVTCDIRLRVRAEYCEHGPAL EQGVASRRPQALARQLDVFGQATAVLRSRDLGSVVCDIKFSEL SYLDAFWGDYLSGALLQALRGVFLTEALREAVGREAVRLLVSV DEADYEAGRRRLLLMEEEGGRRPTEAS
482	1221	1	1321	APNTAELRICRVNKNCGSVRGGDEIFLLCDKVQKDDIEVRFVL NDWEAKGIFSQADVHRQVAIVFKTPPYCKAITEPVTVKMQLRR PSDQEVSESMDFRYLPDEKDTYGNKAKKQKTTLLFQKLCQDHV ETGFRHVDQDGLELLTSGDPPTLASQSAGITVNFPERPRPGLL GSIGEGRYFKKEPNLFSHDAVVREMPTGVSSQAESYYPSPGPI SSGLSHHASMAPLPSSSWSSVAHPTPRSGNTNPLSSFSTRTLP SNSQGIPPFLRIPVGNDLNASNACIYNNADDIVGMEASSMPSA DLYGISDPNMLSNCSVNMMTTSSDSMGETDNPRLLSMNLENPS CNSVLDPRDLRQLHQMSSSSMSAGANSNTTVFVSQSDAFEGSD FSCADNSMINESGPSNSTNPNSHGFVQDSQYSGIGSMQNEQLS DSFPYEFFQV
483	1222	1	1311	RRLSLLDLQLGPLGRDPPQECSTFSPTDSGEEPGQLSPGVQFQ RRQNQRRFSMEDVSKRLSLPMDIRLPQEFLQKLQMESPDLPKP LSRMSRRASLSDIGFGKLETYVKLDKLGEGTYATVFKGRSKLT ENLVALKEIRLEHEEGAPCTAIREVSLLKNLKHANIVTLHDLI HTDRSLTLVFEYLDSDLKQYLDHCGNLMSMHNVKIFMFQLLRG LAYCHHRKILHRDLKPQNLLINERGELKLADFGLARAKSVPTK TYSNEVVTLWYRPPDVLLGSTEYSTPIDMWGVGCIHYEMATGR PLFPGSTVKEELHKINRLLGTPTEETWPGVTAFSEFRTYSFPC YLPQPLINHAPRLDTDGIHLLSSLLLYESKSRMSAEAALSHSY FRSLGERVHQLEDTASIFSLKEIQLQKDPGYRGLAFQQPGRGK NRRQSIF
484	1223	807	356	CTPHGSSSSWKIPLWPRHMSPLHSCLPVGTSTSSGPLAVPRDC FHLCCLWGQLLLISCPLACGQGCRVAGGQQHVPGQALGTLSPL VSLLTWAGPSLDWPHPGSLVTPRCPILPAVPVLVKGLGGWPPT RPSRAAPVSGPWDQLPYFPGL
485	1224	1199	370	LISPVWGNIQRSRSVPLFPSGLVLGGIWARGPLLALLASFNII SVLNAECYLKQILHPTSHFTVSETPPLSGNDTDSLSCDSGSSA TSTPCVSRLVTGHHLWASKNGRHVLGLIEDYEALLKQISQGQR LLAEMDIQTQEAPSSTSQELGTKGPHPAPLSKFVSSVSTAKLT LEEAYRRLKLLWRVSLPEDGQCPLHCEQIGEMKAEVTKLHKKL FEQEKKLQNTMKLLQLSKRQEKVIFDQLVVTHKILRKARGNLE LRPGGAHPGTCSPSRPGS

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486	1225	2469	1660	LGLFCILPIDTLCAVLERDTLSIRESRLFGAVVRWAEAECQRQ QLPVTFGNKQKVLGKALSLIRFPLMTIEEFAAGPAQSGILSDR EVVNLFLHFTVNPKPRVEYIDRPRCCLRGKECCINRFQQVESR WGYSGTSDRIRFTVNRRISIVGFGLYGSIHGPTDYQVNIQIIE YEKKQTLGQNDTGFSCDGTANTFRVMFKEPIEILPNVCYTACA TLKGPDSHYGTKGLKKVVHETPAASKTVFFFFSSPGNNNGTSI EDGQIPEIIFYT
487	1226	1193	372	SVWWNSEVKDWMQKKRRGLRNSRATAGDIAHYYRDYVVKKGLG HNFVSGAVVTAVEWGTPDPSSCGAQDSSPLFQVSGFLTRNQAQ QPFSLWARNVVLATGTFDSPARLGIPGEALPFIHHELSALEAA TRVGAVTPASDPVLIIGAGLSAADAVLYARHYNIPVIHAFRRA VDDPGLVFNQLPKMLYPEYHKVHQMMREQSILSPSPYEGYRSL PRHQLLCFKEDCQAVFQDLEGVEKVFGVSLVLVLIGSHPDLSF LPGAG\LTLQWILTSR
488	1227	756	1016	KLRPFIFSNQSLWLHSYEGAELEKTFIKGSWATFWVKVASCWA CVLLYLGLLLAPLCWPPTQKPQPLILRRRRHRIISPDNKYPPV
489	1228	1	747	QLIHLSHGYQIHWTDYYNVGTGRPEFGTRAAHKSLAGAELKTL KDFVTVLAKLFPGRPPVKKLLEMLQEWLASLPLDRIPYNAVLD LVNNKMRISGIFLTNHIKWVGCQGSRSELRGYPCSLWKLFHTL TVEASTHPDALVGTGFEDDPQAVLQTMRRYVHTFFGCKECGEH FEEMAKESMDSVKTPDQAILWLWKKHNMVNGRLAGEKPLGMGG SARAEGGPGPGTARTARLPWGLSLSFAASCHPLC
490	1229	4797	2398	HGGATFINAFVTTPMCCPSRSSMLTGKYVHNHNVYTNNENCSS PSWQAMHEPRTFAVYLNNTGYRTAFFGKYLNEYNGSYIPPGWR EWLGLIKNSRFYNYTVCRNGIKEKHGFDYAKDYFTDLITNESI NYFKMSKRMYPHRPVMMVISHAEPHGPEDSAPQFSKLYPNASQ HITPSYNYAPNMDKHWIMQYTGPMLPIHMEFTNILQRKRLQTL MSVDDSVERLYNMLVETGELENTYIIYTADHGYHIGQFGLVKG KSMPYDFDIRVPFFIRGPSVEPGSIVPQIVLNIDLAPTILDIA GLDTPPDVDGKSVLKLLDPEKPGNRFRTNKKAKIWRDTFLVER GKFLRKKEESSKNIQQSNHLPKYERVKELCQQARYQTACEQPG QKWQCIEDTSGKLRIHKCKGPSDLLTVRQSTRNLYARGFHDKD KECSCRESGYRASRSQRKSQRQFLRNQGTPKYKPRFVHTRQTR SLSVEFEGEIYDINLEEEEELQVLQPRNIAKRHDEGHKGPRDL QASSGGNRGRMLADSSNAVGPPTTVRVTHKCFILPNDSIHCER ELYQSARAWKDHKAYIDEEIEALQDKIKNLREVRGHLKRRKPE ECSCSKQSYYNKEKGVKKQEKLKSHLHPFKEAAQEVDSKLQLF KENNRRRKKERKEKRRQRKGEECSLPGLTCFTHDNNHWQTAPF WNLGSFCACTSSNNNTYWCLRTVNETHNFLFCEFATGFLEYFD MNTDPYQLTNTVHTVERGILNQLHVQLMELRSCQGYKQCNPRP KNLDVGNKDGGSYDLHRGQLWDGWEG

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491	1230	2480	385	HLLIAQELADRVGEGRACWSLGNAYVSMGRPAQALTFAKKHLQ ISQEIGDRHGELTARMNVAQLQLVLGRLTSPAASEKPDLAGYE AQGARPKRTQRLSAETWDLLRLPLEREQNGDSHHSGDWRGPSR DSLPLPVRSRKYQEGPDAERRPREGSHSPLDSADVRVHVPRTS IPRAPSSDEECFFDLLTKFQSSRMDDQRCPLDDGQAGAAEATA APTLEDRIAQPSMTASPQTEEFFDLIASSQSRRLDDQRASVGS LPGLRITHSNAGHLRGHGEPQEPGDDFFNMLIKYQSSRIDDQR CPPPDVLPRGPTMPDEDFFSLIQRVQAKRMDEQRVDLAGGPGA GGRRPARAPAAVPAWCELRPCAHRQAHPAPTPGRRSHSHSHVL PRPLPRTGTGHAAPRPPRPRATGSGQAARGGRACFHPGLAPMA LSFLPSAPAAGRTGPSACRPRPGAVRLPHPLPQALPVLPCPAK CETLLSPSPSPKVSLSRLLGPPRTGPCSVPPELVLGWPCDRHA PPLQLRPGAGLPPSLSPHSPARGQQPQKAPQTTHGRPGCSGSP EVPPAESQGPAGASTGAGPISKAEGMAGHELRHSKTPSQEKGQ GLVLGMLTGSKSSAQSGWEVAPGSVTLTQVGGWSVEAGEASLS STLQTPHMRTPLLPPAGGDDITALSMGRGLTGHQVRDPRTGRT CWSLRWAPGA .
492	1231	3	398	NSAADLAIFALWGLKPVVYLLASSFLGLGLHPISGHFVAEHYM FLKGHETYSYYGPLNWITFNVGYHVEHHDFPSIPGYNLPLVRK IAPEYYDHLPQHHSWVKVLWDFVFEDSLGPYARVKRVYRLAKD GL
493	1232	1	214	QESGFSCKGPGQNVAVTRAHPDSQGRRRRPERGARGGQVFYNS EYGELSEPSEEDHCSPSARVTFFTDNSY
494	1233	3	443	VIVHARPIRTRASKYYIPEAVYGLPAYPAYAGGGGFVLSGATL HRLAGACAQVELFPIDDVFLGMCLQRLRLTPEPHPAFRTFGIP QPSAAPHLSTFDPCFYRELVVVHGLSAADIWLMWRLLHGPHGP ACAHPQPVAAGPFQWDS
495	1234	1	897	MASAACSMDPIDSFELLDLLFDRQDGILRHVELGEGWGHVKDQ VLPNPDSDDFLSSILGSGDSLPSSPLWSPEGSDSGISEDLPSD PQDTPPRSGPATSPAGCHPAQPGKGPCLSYHPGNSCSTTTPGP VIQQQHHLGASYLLRPGAGHCQELVLTEDEKKLLAKEGITLPT QLPLTKYEERVLKKIRRKIRNKQSAQESRKKKKEYIDGLETRS CCCPLPSSSSPPSALLAPTKPRALGTLRLYECSPELCTTMLPP AWLLMLCQAPRPQDPDPRLTQPEKSLQEAPGQTGASRTPRT

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496	1235	4235	940	ARGRRSRPVWAASWGGRGRPAARRRPRGLAATMGFELDRFDGD VDPDLKCALCHKVLEDPLTTPCGHVFCAGCVLPWVVQEGSCPA RCRGRLSAKELNHVLPLKRLILKLDIKCAYATRGCGRVVKLQQ LPEHLERCDFAPARCRHAGCGQVLLRRDVEAHMRDACDARPVG RCQEGCGLPLTHGEQRAGGHCCARALRAHNGALQARLGALHKA LKKEALRAGKREKSLVAQLAAAQLELQMTALRYQKKFTEYSAR LDSLSRCVAAPPGGKGEETKSLTLVLHRDSGSLGFNIIGGRPS VDNHDGSSSEGIFVSKIVDSGPAAKEGGLQIHDRIIEVNGRDL SRATHDQAVEAFKTAKEPIVVQVLRRTPRTKMFTPPSESQLVD TGTQTDITFEHIMALTKMSSPSPPVLDPYLLPEEHPSAHEYYD PNDYIGDIHQEMDREELELEEVDLYRMNSQDKLGLTVCYRTDD EDDIGIYISEIDPNSIAAKDGRIREGDRIIQINGIEVQNREEA VALLTSEENKNFSLLIARAELQLDEGWMDDDRNDFLDDLHMDM LEEQHHQAMQFTASVLQQKKHDEDGGTTDTATILSNQHEKDSG VGRTDESTRNDESSEQENNGDDATASSNPLAGQRKLTCSQDTL GSGDLPFSNKSFISPECTGAAYLGIPVDECERFRELLELKCQV KSATPYGLYYPSGPLDAGKSDPESVDKELELLNEELRSIELEC LSIVRAHKMQQLKEQYRESWMLHNSGFRNYNTSIDVRRHELSD ITELPEKSDKDSSSAYNTGESCRSTPLTLEISPDNSLRRAAEG ISCPSSEGAVGTTEAYGPASKNLLSITEDPEVGTPTYSPSLKE LDPNQPLESKERRASDGSRSPTPSQKLGSAYLPSYHHSPYKHA HIPAHAQHYQSYMQLIQQKSAVEYAQSQMSLVSMCKDLSSPTP SEPRMEWKVKIRSDGTRYITKRPVRDRLLRERALKIREERSGM TTDDDAVSEMKMGRYWSKEERKQHLVKAKEQRRRREFMMQSRL DCLKEQQAADDRKEMNILELSHKKMMKKRNKKIFDNWMTIQEL LTHGTKSPDGTRVYNSFLSVTTV
497	1236	2	157	FFFLVEMGFCHVGQGGLTLIGSSNLPASASKSAGITGVSHCAR PDFKSCVE
498	1237	1	211	LAGRKVLLFVSGYVVGWGPITWLLMSEVLPLRARGVASGLCVL ASWLTAFVLTKSFLPGGVSVQPQAPGP
499	1238	2	345	FWAPGPPGVGAAVGDASTRSLRESCPSPSPGRLRRTTAPWSSQ ARAAAPAPSSSCRGPDGASSPRDLPWRPWKILRRTPLSGDVEL SQVHPDQRILRRFILSRTCGNTIPGMAE
500	1239	1	523	MRRFLSKVYSFPMRKLILFLVFPVVRQTPTQHFKNQFPALHWE HELGLAFTKNRMNYTNKFLLIPESGDYFIYSQVTFRGMTSECS EIRQAGRPNKPDSITVVITKVTDSYPEPTQLLMGTKSVCEVGS NWFQPIYLGAMFSLQEGDKLMVNVSDISLVDYTKEDKTFFGAF LL

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501	1240	2	1277	FVWDEVAQRSGCEERWLVIDRKVYNISEFTRRHPGGSRVISHY AGQDATDPFVAFHINKGLVKKYMNSLLIGELSPEQPSFEPTKN KELTDEFRELRATVERMGLMKANHVFFLLYLLHILLLDGAAWL TLWVFGTSFLPFLLCAVLLSAVQAQAGWLQHDFGHLSVFSTSK WNHLLHHFVIGHLKGAPASWWNHMHFQHHAKPNCFRKDPDINM HPFFFALGKILSVELGKQKKKYMPYNHQHKYFFLIGPPALLPL YFQWYIFYFVIQRKKWVDLAWMITFYVRFFLTYVPLLGLKAFL GLFFIVRFLESNWFVWVTQMNHIPMHIDHDRNMDWVSTQLQAT CNVHKSAFNDWFSGHLNFQIEHHLFPTMPRHNYHKVAPLVQSL CAKHGIEYQSKPLLSAFADIIHSLKESGQLWLDAYLHQ
502	1241	999	540	QCGGIPYNTTQFLMNDRDPEEPNLDVPHGISHPGSSGESEAGD SDGRGRAHGEFQRKDFSETYERFHTESLQGRSKQELVRDYLEL EKRLSQAEEETRRLQQLQACTGQQSCRQVEELAAEVQRLRTEN QRLRQENQMWNREGCRCDEEPGT
503	1242	1448	875	SPERSSLSVGREKAMEVPPPAPRSFLCRALCLFPRVFAAEAVT ADSEVLEERQKRLPYVPEPYYPESGWDRLRELFGKD\VTGSLF RINVGLRGLVAGGIIGALLGTPVGGLLMAFQKYSGETVQERKQ KDRKALHELKLEEWKGRLQVTEHLPEKIESSLQEDEPENDAKK IEALLNLPRNPSVIDKQDKD
504	1243	149	1293	RSLGLAVTEMVPWVRTMGQKLKQRLRLDVGREICRQYPLFCFL LLCLSAASLLLNRYIHILMIFWSFVAGVVTFYCSLGPDSLLPN IFFTIKYKPKQLGLQELFPQGHSCAVCGKVKCKRHRPSLLLEN YQPWLDLKISSKVDASLSEVLELVLENFVYPWYRDVTDDESFV DELRITLRFFASVLIRRIHKVDIPSIITKKLLKAAMKHIEVIV KARQKVKNTEFLQQAALEEYGPELHVALRSRRDELHYLRKLTE LLFPYILPPKATDCRSLTLLIREILSGSVFLPSLDFLADPDTV NHLLIIFIDDSPPEKATEPASPLVPFLQKFAEPRNKKPSVLKL ELKQIREQQDLLFRFMNFLKQEGAVHVLHVLFDCGGI
505	1244	2	1116	QSLAEVLQQLGASSELQAVLSYIFPTYGVTPNHSAFSMHALLV NHYMKGGFYPRGVTSEIAFHTIPVIQRAGGAVLTKATVQSVLL DSAGKACGVSVKKGHELVNIYCPIVVSNAGLFNTYEHLLPGNA RCLPGVKQQLGTVRPGLGMTSVFICLRGTKEDLHLPSTNYYVY YDTDMDQAMERYVSMPREEAAEHIPLLFFAFPSAKDPTWEDRF PGRSTMIMLIPTAYEWFEEWQAELKGK\RGSDYETFKNSFVEA SMSVVLKLFPQLEGKVESVTAGSPLTNQFYL\AAPRGACYGAD HDLGRLHPCVMASLRAQSPIPNLYLTGQDIFTCGLVGALQGAL LCSSTILKRNLYSDLKNLDSRIRAQKKKN
506	1245	1759	873	RPQETRVLQVSCGRAHSLVLTDREGVFSMGNNSYGQCGRKVVE NEIYSESHRVHRMQDFDGQVVQVACGQDHSLFLTDKGEVYSCG WGADGQTGLGHYNITSSPTKLGGDLAGVNVIQVATYGDCCLAV SADGGLFGWGNSEYLQLASVTDSTQVNVPRCLHFSGVGKVRQA ACGGTGCAVLNGEGHVFVWGYGILGKGPNLVESAVPEMIPPTL FGLTEFNPEIQVSRIRCGLSHFAALTNKGELFVWGKNIRGCLG IGRLEDQYFPWRVTMPGEPVDVACGVDHMVTLAKSFI

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507	1246	520	2	LPFREWLMIVVSLSAAAVAAAFMAKCRMVLSSRYFCSHFVMSA SRARIRSSFSRTSSRRAGALYSGMLAGWPFPCFCWVLSASSSL SSQVRSLRSICSRFSHADCSWVRACCSFSTFSTYACFSRNSSS SLMTLAWALLKAWSRISMCLRWSSLAVRTAANSISNFSFSFKN
508	1247	1	1083	MQAVRATASQSLSCARAPREPTQHALRAHWFPPAAAVQPSPHS GVAAAAGTWSSAFRGEHPLVSSGLLLGVREQSFRLLRSKAGTH MYLEHTSHCPHHDDDTAMDTPLPRPRPLLAVERTGQRPLWAPS LELPKPDMQPLPAGAFLEEVAEGTPAQTESEPKVLDPEEDLLC IAKTFSYLRESGWYWGSITASEARQHLQKMPEGTFLVRDSTHP SYLFTLSVKTTRGPTNVRIEYADSSFRLDSNCLSRPRILAFPD VVSLVQHYVASCTADTRSDSPDPAPTPALPMPKEDAPSDPALP APPPATAVHLKLVQPFVRRSSARSLQHLCRLVINRLVADVDCL PLPRRMADYLRQYPFQL
509	1248	2	841	FVDIFQRWKECRGKSPAQAELSYLNKAKWLEMYGVDMHVVRGR DGCEYSLGLTPTGILIFEGANKIGLFFWPKITKMDFKKSKLTL VVVEDDDQGREQEHTFVFRLDSARTCKHLWKCAVEHHAFFRLR TPGNSKSNRSDFIRLGSRFRFSGRTEYQATHGSRLRRTSTFER KPSKRYPSRRHSTFKASNPVIAAQLCSKTNPEVHNYQPQYHPN IHPSQPRWHPHSPNVRPSFQDDRSHWKASASGDDSHFDYVHDQ NQKNLGGMQSMMYRDKLMTAL
510	1249	2	763	GGIRLIQKLTWRSRQQDRENCAMKGKHKDECHNFIKVFVPRND EMVFVCGTNAFNPMCRYYRVSIFYVICFF*STFLPSLICC*S* NLSAFQ*FVLSLVQ*KNKDRILQMEF*YK*NSIAFKRAR*IDM TLAIYFSFV\LSTL*YDGEEISGLARCPFDARQTNGALFADGK LYSATVADFLASDAVIYRSMGDGSALRTIKYDSKWIKE/PHFL YAIK/Y/GNYVYFSFREIVAT**LG/KAVDS/RVARYEKQLVG PTV
511	1250	1555	629	ARALARERESESARADDVTLGVSAILAVDRGGNLGSA\DGWAY IDVEVRRPWAFVGPGCSRSSGNGSTAYGLVGSPRWLSPFHTGG AVSLPRRPRGPGPVLGVARPCLRCVLRPE\HYEPGSHYSGFAG RDASRAFVTGDCSEAGLVDDVSDLSAAEMLTLHNWLSFYEKNY VCVGRVTGRFYGEDGLPTPALTQVEAAITRGLEANKLQLQEKQ TFPPCNAEWSSARGSRLWCSQKSGGVSRDWIGVPRKLYKPGAK EPRCVCVRTTGPPSGQMPDNPPHRNRGDLDHPNLAEYTGCPPL AITCSFPL
512	1251	1100	798	YFIICRDGVLLFCPGWSQTPGAQAILLHWATQNAGMTDMSHSA QPIYLFIYLIRTRSHYVAQAGQLLDSNDSPNVASQNVGITGMS HHAWLKIVLYFCII

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513	1252	3	1395	PAARPPSLVRLSPSPPKPRARARAPQSVEPAAPLVARGSSPPA RPAPAMVRPRRAPYRSGAGGPLGGRGRPPRPLVVRAVRSRSWP ASPRGPQPPR\IRARSAPPMEGARVFGALGPIGPSSPGLTLGG LAVSEHRLSNKLLAWSGVLEWQEKRRPYSDSTAKLKRTLPCQA YVNQGENLETDQWPQKLIMQLIPQQLLTTLGPLFRNSQLAQFH FTNRDCDSLKGLCRIMGNGFAGCMLFPHISPCEVRVLMLLYSS KKKIFMGLIPYDQSGFVSAIRQVITTRKQAVGPGGVNSGPVQI VNNKFLAWSGVMEWQEPRPEPNSRSKRWLPSHVYVNQGEILRT EQWPRKLYMQLIPQQLLTTLVPLFRNSRLVQFHFTKDLETLKS LCRIMDNGFAGCVHFSYKASCEIRVLMLLYSSEKKIFIGLIPH DQGNFVNGIRRVIANQQQVLQRNLEQEQQQRGMGG
514	1253	320	964	GRPALGREAPPQAGLSSTPPPCSETCTMGPHSILRTVHCRPTK TPPEPSAEPHPLSLLTSSNTSLAGTSLGRDLTPGGGKPPSGQT PRNPESPRHRLGSPRGRRWLASPTPTGSGRSGPASRGQRRLSC AAQDPTSEGASVGAMEAGLGPPTAAPRGVVSEAAESLGGTLSW GAWGRPPAGPSGLAGRRSRREALRPDRKEASVMMAAVSAIQP
515	1254	704	107	PGVPTHGWPRSRVLTRVRGSRGSGKMAAAVVLAAGLRAARRAV AATGVRGGQVRGAAGVTDGNEVAKAQQATPGGAAPTIFSRILD KSLPADILYEDQQCLVFRDVAPQAPVHFLVIPKKPIPRISQAE EEDQQ/LTYVPPLSL*LLGHLLLVAKQTAKAEGLGDGYRLVIN DGKLGAQSVYHLHIHVLGGRQLQWPPG
516	1255	2299	924	VPNYLPSVSSAIGGEVPQRYVWRFCIGLHSAPRFLVAFAYWNH YLSCTSPCSCYRPLCRLNFGLNVVENLALLVLTYVSSSEDF/T WVPG*GRSGEVFPEGTGLPLPHSDLPTSWCGHSLQCGSQSSFP PAIHENAFIVFIASSLGHMLLTCILWRLTKKHTVSQE\DGLSL AGAPRQPRRKSRTSVLRIRVMVRWELSSNGNPGRGVLGLGLGL GNKLRVVGQNLGL*HCVWVVWETGE*KRWRLQMGIE*GVASRR Q*VRNSVRGLVCHNSSAPPMYMGFFSPTVFGGGVGG*LHVTFI LHPPEVEAAGIPLLLGPSLPQRQGREHIVVILAAPACAPFHDR *WEPREIRPSP*ELGLRGEPTLSYPASCRVIRQPIP*DRKSYS WKQRLFIINFISFFSALAVYFRHNMYCEAGVYTIFAILEYTVV LTNMAFHMTAWWDFGNKELLITSQPEEKRF
517	1256	3	254	IDLLEIRNGPRSHESFQEMDLNDDWKLSKDEVKAYLKKEFEKH GAVVNESHHDALVEDIFDKEDEDKDGFISAREFTYKHDEL
518	1257	2	611	PRVRGRVGKEGAAAKPRSLLRRFQLLSWSVCGGNKDPWVQELM SCLDLKECGHAYSGIVAHQKHLLPTSPPISQASEGASSDIHTP AQMLLSTLQSTQRPTLPVGSLSSDKELTRPNETTIHTAGHSLA AGPEAGENQKQPEKNAGPTARTSATVPVLCLLAIIFILTAALS YVLCKRRRGQSPQSSPDLPVHYIPVAPDSNT
519	1258	1002	418	LIISNFLKAKQKPGSTPNLQQKKSQARLAPDIVSASQYRKFDE FQTGILIYELLHQPNPFEVRAQLRERDYRQEDLPPLPALSLYS PGLQQLAHLLLEADPIKRIRIGEAKRVLQCLLWGPRRELVQQP GTSEEALCGTLHNWIDMKRALMMMKFAEKAVDRRRGVELEDWL CCQYLASAEPGALLQSLKLLQLL

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520	1259	2	2019	KRGLIVVMAHEMIGTQIVTERGVALLESGTEKVLLIDSRPFVE YNTSHILEAININCSKLMKRRLQQDKVLITELIQHSAKHKVDI DCSQKVVVVYDQSSQDVASLSSDCFLTVLLGKLEKSFNSVHLLA GGFAEFSRCFPGLCEGKSTLVPTCISQPCLPVANIGPTRILPN LYLGCQRDVLNKELMQQNGIGYVLNASNTCPKPDFIPESHFLR VPVNDSFCEKILPWLDKSVDFIEKAKASNGCVLVHCLAGISRS ATIAIAYIMKRMDMSLDEAYRFVKEKRPTISPNFNFLGQLLDY EKKIKNQTGASGPKSKLKLLHLEKPNEPVPAVSEGGQKSETPL SPPCADSATSEAAGQRPVHPASVPSVPSVQPSLLEDSPLVQAL SGLHLSADRLEDSNKLKRSFSLDIKSVSYSASMAASLHGFSSS EDALEYYKPSTTLDGTNKLCQFSPVQEL/CGADSRNQS**GGS Q/PSPRSCRPPGLQTARASDCIRSEPAAVAPPRGPFYLHCIEV GAWRTITTPASFSAFPP\PAAPHEVCWPGP*GLA\PDILAPQT STPSLTSSWYFATESSHFYSASAIYGGSASYSAYSCSQLPTCG DQVYSVRRRQKPSDRADSRRSWHEESPFEKQFKRRSCQMEFGE SIMSENRSREELGKVGSQSSFSGSMEIIEVS
521	1260	20	803	ASSSKRVSRQKMLQLWKLVLLCGVLTGTSESLLDNLGNDLSNV VDKLEPVLHEGLETVDNTLKGILEKLKVDLGVLQKSSAWQLAK QKAQEAEKLLNNVISKLLPTNTDIFGLKISNSLILDVKAEPID DGKGLNLSFPVTANVTEAGPIIDQIIN\LRASLDLLTAVTIET DPQTHHPVAGLGECARDPTSISLCLLDKHSQIINKFVNSVINT LKSTVSSLLQKEICPLIRIFIHSLDVNVIQQVVDNPQHKTQLQ TLI
522	1261	1246	411	CSLRRPRSAAEPDADHVPLLGLLRLQLRAARQPGAMRPQGPAA SPQRLRGLLLLLLLQLPAPSSASEIPKGKQKAQLRQREVVDLY NGMCLQGPAGVPGRDGSPGANGIPGTPGIPGRDGFKGEKGECL RESFEESWTPNYKQCSWSSLNYGIDLGKIAECTFTKMRSNSAL RVLFSGSLRLKCRNACCQRWYFTFNGAECSGPLPIEAIIYLDQ GSPEMNSTINIHRTSSVEGLCEGIGAGLVDVAIWVGTCSDYPK GDASTGWNSVSRIIIEELPK
523	1262	2009	921	MHSAMLGTRVNLSVSDFWRVMMRVCWLVRQDSRHQRIRLPHLE AVVIGRGPETKITDKKCSRQQVQLKAECNKGYVKVKQVGVNPT SIDSVVIGKDQEVKLQPGQVLHMVNELYPYIVEFEEEAKNPGL ETHRKRKRSGNSDSIERDAAQEAEAGTGLEPGSNSGQCSVPLK KGKDAPIKKESLGHWSQGLKISMQDPKMQVYKDEQVVVIKDKY PKARYHWLVLPWTSISSLKAVAR\EHLELLKHMHTVGEKVIVD FAGSSKLRFRLGYHAIPSMSHVHLHVISQDFDSPCLKNKKHWN SFNTEYFLESQAVIEMVQEAGRVTVRDGMPELLKLPLRCHECQ QLLPSIPQLKEHLRKHWTQ

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
524	1263	2067	198	DMSDTSESGAGLTRFQAEASEKDSSSMMQTLLTVTQNVEVPET PKASKALEVSEDVKVSKASGVSKATEVSKTPEAREAPATQASS TTQLTDTQVLAAENKSLAADTKKQNADPQAVTMPATETKKVSH VADTKVNTKAQETEAAPSQAPADEPEPESAAAQSQENQDTRPK VKAKKARKVKHLDGEEDGSSDQSQASGTTGGRRVSKALMASMA RRASRGPIAFWARRASRTRLACFGPGEPLLSPWRSP\KARRQR GFAVRVAKFQ\SSQEPEAPPPW\DVALLQGRAN\DLVKYLLAK DQTKIPIKRS\DMLKDIIKEYTDVYPEII\ERAGYSLE\KVFG IQLKEIDKNDHLYILLSTLEPTDAGILGTTKDSPKLGLLMVLL SIIF\MNGNRS\SEAVIWEVLR/RSLGLRLGIHHS\LLGDVK\ KLITDEV\VKQKYL\DYARVPHSNSP\EYEFFWG\LRSYYEDQ QR*KSFKFACK\VQK\KDPK\EWAAQSPPGKAR/ERMEAD\LK AAS*GSPWKPRLRAEIKARMGIGLGSENAAGPCNWDEADIGPW AKARIQAGAEAKAKAQESGSASTGASTSTNNSASASASTSGGF SAGASLTATLTFGLFAGLGGAGASTSGSSGACGFSYK
525	1264	1	1397	ARPPVCTGSTMSLTVVSMACVGFFLLQGAWPLMGGQDKPFLSA RPSTVVPRGGHVALQCHYRRGFNNFMLYKEDRSHVPIFHGRIF QESFIMGPVTPAHAGTYRCRGSRPHSLTGWSAPSNPLVIMVTG NHRKPSLLAHPGPLLKSGETVILQCWSDIMFEHFFLHKEGISK DPSRLVGQIHDGVSKANFSIGPMMLALAGTYRCYGSVTHTPYQ LSAPSDPLDIVVTGPYEKPSLSAQPGPKVQAGESVTLSCSSRS SYDMYHLSREGGAHERRLPAVRKVNRTFQADFPLGPATHGGTY RCFGSFRHSPYEWSDPSDPLLVSVTGNPSSSWPSPTEPSSKSG NLRHLHILIGTSVVKIPFTILLFFLLHRWCSNKK\NAAVMDQE PAGNR\VNSEDSDEQDHQEVSYP*LEHCVFTQRKITRPSQRPK TPPTDTSMYIELPNAEPRSKVVFCPRAPQSGLEGIF

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526	1265	6657	988	LHNLRERYFSGLIYTYSGLFCVVVNPYKHLPIYSEKIVDMYKG KKRHEMPPHIYAIADTAYRSMLQDREDQSILCTGESGAGKTEN TKKVIQYLAVVASSHKGKKDTSITGELEKQLLQANPILEAFGN AKTVKNDNSSRFGKFIRINFDVTGYIVGANIETYLLEKSRAIR QARDERTFHIFYYMIAGAKEKMRSDLLLEGFNNYTFLSNGFVP IPAAQDDEMFQETVEAMAIMGFSEEEQLSILKVVSSVLQLGNI VFKKERNTDQASMPDNTAAQKVCHLMGINVTDFTRSILTPRIK VGRDVVQKAQTKEQADFAVEALAKATYERLFRWILTRVNKALD KTHRQGASFLGILDIAGFEIFEVNSFEQLCINYTNEKLQQLFN HTMFIL\EQEEYQREGIEWNFIDFGLDLQPCIELIERPNNPPG VLALLDEECWFPKATDKSFVEKLCTEQGSHPKFQKPKQLKDKT EFSIIHYAGKVDYNASAWLTKNMDPLNDNVTSLLNASSDKFVA DLWKDVDRIVGLDQMAKMTESSLPSASKTKKGMFRTVGQLYKE QLGKLMTTLRNTTPNFVRCIIPNHEKRSGKLDAFLVLEQLRCN GVLEGIRICRQGFPNRIVFQEFRQRYEILAANAIPKGFMDGKQ ACILMIKALELDPNLYRIGQSKIFFRTGVLAHLEEERDLKITD VIMAFQAMCRGYLARKAFAKRQQQLTAMKVIQRNCAAYIKLRN WQWCRLFTKV*PLLQVTRQE*EMQAKEDELQKTKERQQKAENE LKELEQKHSQLTEEKNLLQEQLQAETELYAEAEEMRVRLAAKK QELEEILHEMEARLEEEEDRGQQLQAERKKMAQQMLDLEEQLE EEEAARQKLQLEKVTAEAKIKKLEDEILVMDDQNNKLSKERKL LEERISDLTTNLAEEEEKAKNLTKLKNKHESMISELEVRLKKE EKSRQELEKLKRKLEGDASDFHEQIADLQAQIAELKMQLAKKE EELQAALARLDDEIAQKNNALKKIRELEGHISDLQEDLDSERA ARNKAEKQKRDLGEELEALKTELEDTLDSTATQQELRAKREQE VTVLKR\ALNEETRSHEAQVQEMRQKHAQAVQSLTEQLEQ*K RAKANLDKNKQTLEKENTD\LAGELRVLGQA\KQEVEHRMKKL QAQVQELQSKCSDGERARAELNDKVHK\LQNEVESVTG\MLNE AEGKAIKLAKDVASLSSQL\QDTQELLQEESRQKLNVST\SLR \QLEEERNSLQDQLDEEMEAKQNLERHISTLNIQLSDSKKKLQ DFASTVEALEEGKKRFQKEIENLTQQYEEKAAAYDKLEKTKNR LQQELDDLVVDLDNQRQLVSNLEKKQRKFDQLLAEEKNISSKY ADERDRVEAEAREKETKALSL\ARALEEALEAKEELERTNKML KA\EMGRPGSASKD\DVGQELSHDL\EKSK\RALGDPRLEEMK T\QLEELGRTELASPRRDA\KLRLEVNMQAPSRASFER\DLQA RTEQNE\ESRR\HLQRQLHEYETELEDERKQRALAAAAKIKLG WDPVRTLDL*ADSAIKGRGGKAIKQLRKLQAQMKDFQRELEDA \RASRDEIF\ATA\KENEKKAKSLEA\DLMQLQE\DLAAAEEG RKQ\ADLE\KEELAEEL\ASSLSGRNALQDEKRRLEARIAQLE EELEEQGNMEAMSDRVRKATQQAEQLSNELATERSTAQKNES ARQQLERQNKELRSKLHEMEGAVKSKFKSTIAALEAKIAQLEE QVEQEAREKQAATKSLKQKDKKLKEILLQVEDERKMAEQYKEQ AEKGNARVKQLKRQLEEAEEESQRINANRRKLQRELDEATESN EAMGREVNALKSKLRRGNETSFVPSRRSGGRRVIENADGSEEE TDTRDADFNGTKASE

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527	1266	1	775	KLHFAKSLNSELSCSTREAMQDEDGYITLNIKTRKPALVSVGP ASSSWWRVMALILLILCVGMVVGLVALGIWSVMQRNYLQDENE NRTGTLQQLAKRFCQYVVKQSELKGTFKGHKCSPCDTNWRYYG DSCYGFFRHNLTWEESKQYCTDMNATLLKIDNRNIVEYIKAR\ THLIRWVGLSRQKSNEVWKWEDGSVISENMFEFLEDGKGNMNC AYFHNGKMHPTFCENKHYL\MCE\RKAGHDPRWTQLPLMPKRW TG
528	1267	1053	424	NQGLRDVGLCRTCLVNKIFASSILGKSHHHSLVSINQGHNAPW KAAGS\LPLKAAYC\QGFSPCDCLKYG\SWDEKDLMVPQPDTH KGSVLRWISKRGKPLAVEMEEGHCL\CLPLGTECLGVKP\IVH LFNSEMGEK\RPVAG\ARHVGSSAALLFFTPLRCLGGEKHKSG LRARPGIVPSLELNYDIDSFAHMFF/SVDLLLIITLLSYYIPF C
529	1268	1435	1560	MWWRLAPTQAIWRAAGCCMRFSRRRSTCCCLASCIFLLYKIVR GDQPAAKRRQRRRRAAPSAPPQAARLHPPPKLRRFDGVQDPAP YSWAINGKVFDVTQRPANFLRGPRGPETLSDWESQFTFKYHHV GKLLKEGEEPTVYSDEEEPKDESARKND*
530	1269	705	166	GPRMAKFLSQDQINEYKECFSLYDKQQRGKIKATDLMVAMRCL GASPTPGEVQRHLQTHGIDGNGELDFSTFLTIMHMQIKQEDPK KEILLAMLMVDKEKKGYVMASDLRSKLTSLGEKLTHKEV\DDL FRE\ADIEPNGKVKYDEFIHKI/TLLPGRDLLKEENGRASPGP ENLEQLIFL
531	1270	25	1396	ADPHTTVIRFFPAASATKRVLPPVLRVSSPRTWNPNVPESPRI PAPRLPKRMSGAPTAGAALMLCAATAVLLSAQGGPVQSKSPRF ASŴDEMNVLAHGLLQLGQGLREHAERTRSQLSALERRLSACGS ACQGTEGSTDLPLAPESRVDPEVLHSLQTQLKAQNSRIQQLFH KVAQQQRHLEKQHLRIQHLQSQFGLLDHKHLDHEVAKPARRKR LPEMAQPVDPAHNVSRLHRLPRDCQELFQVGERQSGLFEIQPQ GSPPFLVNCKMTSDGGWTVIQRRHDGSVDFNRPWEAYKAGFGD PHGEFWLGLEKVHSITGDRNSRLAVQLRDWDGNAELLQFSVHL GGEDTAYSLQLTAPVAGQLGATTVPPSGLSVPFSTWDQDHDLR RDKNCAKSLSGGWWFGTCSHSNLNGQYFRSIPQQRQKLKKGIF WKTWRGRYYPLQATTMLIQPMAAEAAS
532	1271	1276	90	ALDFGDSCQWPRPQDTMKQLPVLEPGDKPRKATWYTLTVPGDS PCARVGHSCSYLPPVGNAKRGKVFIVGGANPNRSFSDVHTMDL GKHQWDLDTCKGLLPRYEHASFIPSCTPDRIWVFGGANQSGNR NCLQVLNPETRTWTTPEVTSPPPSPRTFHTSSAAIGNQLYVFG GGERGAQPVQDTKLHVFDANTLTWSQPETLGNPPSPRHGHVMV AAGTKLFIHGGLAGDRFYDDLHCIDISDMKWQKLNPTGAA\PA GCAS/HTPAVAMGK\HVYI\FGGMTPAGAPGTQCTQYHTEEQH WDPCLKF\DTPSYPPGTIGTHSHVVSFPW\PVTCASEKEDS\N SLTLNHEAEKEDSADKVMSHSGDSHEESQTATLLCLVFGGMNT EGEIYDDCIVTVVD

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533	1272	1169	639	GFSIGKATDRMDAFRKAKNRAVHHLHYIERYEDHTIFHDISLR FKRTHIKMKKQPKGYGLRCHRAIITICRLIGIKDMYAKVSGSI NMLSLTQGLFRGLSRQETHQQLADKKGLHVVEIREECGPLPIV VASPRGPLRKDPEPEDEVPDVKLDWEDVKTAQGMKRSVWSNLK RAAT
534	1273	25	1396	ADPHTTVIRFFPAASATKRVLPPVLRVSSPRTWNPNVPESPRI PAPRLPKRMSGAPTAGAALMLCAATAVLLSAQGGPVQSKSPRF ASWDEMNVLAHGLLQLGQGLREHAERTRSQLSALERRLSACGS ACQGTEGSTDLPLAPESRVDPEVLHSLQTQLKAQNSRIQQLFH KVAQQQRHLEKQHLRIQHLQSQFGLLDHKHLDHEVAKPARRKR LPEMAQPVDPAHNVSRLHRLPRDCQELFQVGERQSGLFEIQPQ GSPPFLVNCKMTSDGGWTVIQRRHDGSVDFNRPWEAYKAGFGD PHGEFWLGLEKVHSITGDRNSRLAVQLRDWDGNAELLQFSVHL GGEDTAYSLQLTAPVAGQLGATTVPPSGLSVPFSTWDQDHDLR RDKNCAKSLSGGWWFGTCSHSNLNGQYFRSIPQQRQKLKKGIF WKTWRGRYYPLQATTMLIQPMAAEAAS
535	1274	23	1102	TLRSRPAGEAGYLGWDPEQAGEGSALSRPGAMAALMTPGTGAP PAPGDFSGEGSQGLPDPSPEPKQLPELIRMKRDGGRLSEADIR GFVAAVVNGSAQGAQIGAWGGLGVPDPDWEVSPRDFGSLGVRR CPTTSTGPRVPHRCGLPPSRVPPHTRG\MLMAIRLRGMDLEET SVLTQALAQSGQQLEWPEAWRQQLVDKHSTGGVGDKVSLVLAP ALAACGCKVINHLLSRREPIPHMQQPVHPQAAPNLKPGPKPPR PYQGFSPPCSPAQFSPPRSPAQRLGPLWLQTRPLGAGKRSTDG IQTPFPLGPQTAPPREELRTSLPLPQALFPQGQVPTSSPTDTS QPRKLPFHSLTSWAPL
536	1275	3	439	RALRELRERVTHGLAEAGRDREDVSTELYRALEAVRLQNSEGS CEPCPTSWLPFGGSCYYFSVPKTTWAEAQGHCADASAHLA/IV GGLGEQDFLSRDTSALEYWIGRRAVQHLRKVQGYSWVDGVPLS FR*/WEG/HPGETWGPQVRL
537	1276	1	564	RWPRSWPPRAGAARGAAEAAMVGALCGCWFRLGGARPLIPLGP TVVQTSMSRSQVALLGLSLLLMLLLYVGLPGPPEQTSCLWGDP NVTVLAGLTPGNSPIFYREVLPLNQAHRVEV\CCFMERPLTLT RGSSWAHCSYCHRGATGPWPLTFQVLGTRHLQRRQAQRQGGQR CWSGRCGTWRYRMPCW

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538	1277	102	1549	QENQLEKKMKFLIFAFFGGVHLLSLCSGKAICKNGISKRTFEE IKEEIASCGDVAKAIINLAVYGKAQNRSYERLALLVDTVGPRL SGSKNLEKAIQIMYQNLQQDGLEKVHLEPVRIPHWERGEESAV MLEPRIHKIAILGLGSSIGTPPEGITAEVLVVTSFDELQRRAS EARGKIVVYNQPYINYSRTVQYRTQGAVEAAKVGALASLIRSV ASFSIYSPHTGIQEYQDGVPKIPTACITVEDAEMMSRMASHGI KIVIQLKMGAKTYPDTDSFNTVAEITGSKYPEQVVLVSGHLDS WDVGQGAMDDGGGAFISWEALSLIKDLGLRPKRTLRLVLWTAE EQGGVGAFQYYQLHKVNISNYSLVMESDAGTFLPTGLQFTGSE KARAIMEEVMSLLQPLNITQVLSHGEGTDINFWIQAGVPGASL LDDLYKYFFFHHSHGDTMTVHGIQTQMNV\AAAV\WAVVSYV\ VADMEEMLPRS
539	1278	2438	1148	TKPRKRRHQPASQRQRPWSSDSTGDLLARGKGRKEENKGSDRV SLAPPSLRRPMMCQSEARQGPELRAAKWLHFPQLALRRRLGQL SCMSRPALKLRSWPLTVLYYLLPFGALRPLSRVGWRPVSRVAL YKSVPTRLLSRAWGRLNQVELPHWLRRPVYSLYIWTFGVNMKE AAVEDLHHYRNLSEFFRRKLKPQARPVCGLHSVISPSDGRILN FGQVKNCEVEQVKGVTYSLESFLGPRMCTEDLPFPPAASCDSF KNQLVTREGNELYHCVIYLAPGDYHCFHSPTDWTVSHRRHFPG SLMSVNPGMARWIKELFCHNERVVLTGDWKHGFFSLTAVGAT\ NWGSIRIYFDRDLHTNSPRHSKGSYNDFSFVTHTNREGVPMRK GEHLGEFNLGSTIVLIFEAPKDFNFQLKTGQKI\RFGEALGSL
540	1279	3	1911	LPERAFGPRTPRAPRRRRRRLLLSPPPRPPPPLDREPRAPGPW LCPSRAGTAQDPARIRERRGRVAGGAAGPAMELRARGWWLLCA AAALVACARGDPASKSRSCGEVRQIYGAKGFSSS\DVPQAEIS GEHLRICPQGYTCCTSEMEENLANRSHAELETALRDSSRVLQA MLATQLRSFDDHFQHLLNDSERTLQATFPGAFGELYTQNARAF RDLYSELRLYYRGANLHLEETLAEFWARLLERLFKQLHPQLLL PDDYLDCLGKQAEALRPF\GEAP\RELRLRAT\RA\FVAAR\S FVQGLGVAS\DVVRKVAQVPLG\PEC\SRAVIEAGSYC/ALHC VGVPGARPCPDYCRNVLKGCLANQADLDAEWRNLLDSMVLITD KFWGTSGVESVIGSVHTWLAEAINALQDNRDTLTAKVIQGCGN PKVNPQGPGPEEKRRRGKLAPRERPPSGTLEKLVSEAKAQLRD VQDFWISLPGTLCSEKMALSTASDDRCWNGMARGRYLPEVMGD GLANQINNPEVEVDITKPDMTIRQQIMQLKIMTNRLRSAYNGN DVDFQDASDDGSGSGSGDGCLDDLCGRKVSRKSSSSRTPLTHA LPGLSEQEGQKTSAASCPQPPTFLLPLLLFLALTVARPRWR
541	1280	590	189	ATELTRAGMEASALTKSA\VTSVAKVVR\VASGSAVVLPLARI ATSCD*RVGGP/VQAVPMVL\SAMGLQLRAGIASSSIAAKMMS AAAIA\NGGGVSPGQPLWLLLQSLGATGL\SGLTKFILGSIGS AIA\AVIARFY

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542	1281	41	1415	TNGRNLLHHWILGVCGMHPHHQETLKKNRVVLAKQLLLSELLE HLLEKDIITLEMRELIQAKVGSFSQNVELLNLLPKRGPQAFDA FCEALRETKQGHLEDMLLTTLSGLQHVLPPLSCDYDLSLPFPV CESCPLYKKLRLSTDTVEHSLDNKDGPVCLQVKPCTPEFYQTH FQLAYRLQSRPRGLALVLSNVHFTGEKELEFRSGGDVDHSTLV TLFKLLGYDVHVLCDQTAQEMQEKLQNFAQLPAHRVTDSCIVA LLSHGVEGAIYGVDGKLLQLQEVFQLFDNANCPSLQNKPKMFF IQACRGGAIGSLGHLLLFTAATASLAL\ETDRGVDQQDGKNHA GSPGCEESDAGKEKLPKMRLPTRSDMICGYACLKGTAAMRNTK RGSWYIEALAQVFSERACDMHVADMLVKVNALIKDREGYAPGT EFHRCKEMSEYCSTLCRHLYLFPGHPPT
543	1282	862	275	VRGKEVMAALCRTRAVAAESHFLRVFLFFRPFRGVGTESGSES GSSNAKEPKTRAGGFASALERHSELLQKVEPLQKGSPKNVESF ASMLRHSPLTQMGPAKDKLVIGRIFHIVENDL\YIDFGGKFHC VCRRPEVDGEKY\QKGTRVR\LRLLDLELTSRFLGATTD\TTV LEANAVLLGIQESKDSRSKEEHLEKYI

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544	1283	2	4503	IPGASPAPRRAAPLRLGLRLASGWARAPGGVSPVPGPGMGGDA PTMARAQALVLELTFQLCAPETETPEVGCTFEEGSDPAVPCEY SQAQYDDFQWEQVRIHPGTRAPADLPHGSYLMVNTSQHAPGQR AHVIFQSLSENDTHCVQFSYFLYSRDGHSPGTLGVYVRVNGGP LGSAVWNMTGSHGRQWHQAELAVSTFWPNEYQVLFEALISPDR RGYMGLDDILLLSYPCAKAPHFSRLGDVEVNAGQNASFQCMAA GRAAEAERFLLQRQSGALVPAAGVRHISHRRFLATFPLAAVSR AEQDLYRCVSQAPRGRGTSLNFAEFMV/KEPPTPIAPPQLLRA GPTYLIIQLNTNSIIGDGPIVRKEIEYRMARGPWAEVHAVSLQ TYKLWHLDPDTEYEISVLLTRPGDGGTGRPGPPLISRTKCAEP MRAPKGLAFAEIQARQLTLQWEPLGYNVTRCHTYTVSLCYHYT LGSSHNQTI\RECVKTEQGVSRYTMKNLLPYRNVHVRLVLTNP EGRKEGKEVTFQTDEDVPSGIAAESLTFTPLEDMIFLKWEEPQ EPNGLITQYEISYQSIESSDPAVNVPGPRRTISKLRNETYHVF SNLHPGTTYLFSVRARTGKGFGQAALTEITTNISAPSFDYADM PSPLGESENTITVLLRPAQGRGAPISVYQVIVEEEQGSRRLRR EPGGQDCFPVPLTFEAALARGLVDYFGAELAASSLPEAMPFTV GDNKTYRGFWNPPLEPRKAYLIYFQAASHLKGETRLNCIRIAR KAACKESKRPLEVSQRSEEMGLILGICAGGLAVLILLLGAIIV IIRKGRDHYAYSYYPKPVNMTKATVNYRQEKTHMMSAVDRSFT DQSTLQEDERLGLSFMDTHGYSTRGDQRSGGVTEASSLLGGSP RRPCGRKGSPYHTGQLHPAVRVADLLQHINQMKTAEGYGFKQE YESFFEGWDATKKKDKVKGSRQEPMPAYDRHRVKLHPMLGDPN ADYINANYIDIRINREGYHRSNHFIATQGPKPEMVYDFWRMVW QEHCSSIVMITKLVEVGRVKCSRYWPEDSDTYGDIKIMLVKTE TLAEYVVRTFALERRGYSARHEVRQFHFTAWPEHGVPYHATGL LAFIRRVKASTPPDAGPIVIHCSAGTGRTGCYIVLDVMLDMAE CEGVVDIYNCVKTLCSRRVNMIQTEEQYIFIHDAILEACLCGE TTIPVSEFKATYKEMIRIDPQSNSSQLREEFQTLNSVTPPLDV EECSIALLPRNRDKNRSMDVLPPDRCLPFLISTDGDSNNYINA ALTDSYTRSAAFIVTLHPLQSTTPDFWGLVYDYGCTSIVMLNQ LNQSNSAWPCLQYWPEPGRQQYGLMEVEFMSGTADEDLVARVF RVQNISRLQEGHLLVRHFQFLRWSAYRDTPDSKKAFLHLLAEG DKWQAESGDGRTIVHCLNGGGRSGTFCA\CATVLEMIRCHNLV DVFFAAKTLRNYKPNMVETMDQYHFCYDVALEYLEGLESR

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
545	1284	2443	1152	TKPRKRRHQPASQRQRPWSSDSTGDLLARGKGRKEENKGSDRV SLAPPSLRRPMMCQSEARQGPELRAAKWLHFPQLALRRRLGQL SCMSRPALKLRSWPLTVLYYLLPFGALRPLSRVGWRPVSRVAL YKSVPTRLLSRAWGRLNQVELPHWLRRPVYSLYIWTFGVNMKE AAVEDLHHYRNLSEFFRRKLKPQARPVCGLHSVISPSDGRILN FGQVKNCEVEQVKGVTYSLESFLGPRMCTEDLPFPPAASCDSF KNQLVTREGNELYHCVIYLAPGDYHCFHSPTDWTVSHRRHFPG SLMSVNPGMARWIKELFCHNERVVLTGDWKHGFFSLTAVGAT\ NWGSIRIYFDRDLHTNSPRHSKGSYNDFSFVTHTNREGVPMAL RGEHLG/QSFNLGSTIVLIFEAPKDFNFQLKTGQKIRFGEALG SL
546	1285	185	3057	AELGLFGSLRFSSLLHFPPRPRSPASACGPGEGRMERGLPLLC AVLALVLAPAGAFRNDKCGDTIKIESPGYLTSPGYPHSYHPSE KCEWLIQAPDPYQRIMINFNPHFDLEDRDCKYDYVEVFDGENE NGHFRGKFCGKIAPPPVVSSGPFLFIKFVSDYETHGAGFSIRY EIFKRGPECSQNYTTPSGVIKSPGFPEKYPNSLECTYI\VFAP KMSEIIL\DFESFDLEPDSNPPGGMFCRYDRLEIWDGFPDVGP HIGRYCGQKTPGRIRSSSGILSMVFYTDSAIAKEGFSANYSVL QSSVSEDFKCMEALGMESGEIHSDQITASSQYSTNWSAERSRL NYPENGWTPGEDSYREWIQVDLGLLRFVTAVGTQGAISKETKK KYYVKTYKIDVSSNGEDWITIKEGNKPVLFQGNTNPTDVVVAV FPKPLITRFVRIKPATWETGISMRFEVYGCKITDYPCSGMLGM VSGLISDSQITSSNQGDRNWMPENIRLVTSRSGWALPPAPHSY INEWLQIDLGEEKIVRGIIIQGGKHRENKVFMRKFKIGYSNNG SDWKMIMDDSKRKAKSFEGNNNYDTPELRTFPALSTRFIRIYP ERATHGGLGLRMELLGCEVEAPTAGPTTPNGNLVDECDDDQAN CHSGTGDDFQLTGGTTVLATEKPTVIDSTIQSEFPTYGFNCEF GWGSHKTFCHWEHDNHVQLKWSVLTSKTGPIQDHTGDGNFIYS QADENQKGKVARLVSPVVYSQNSAHCMTFWYHMSGSHVGTLRV KLRYQKPEEYDQLVWMAIGHQGDHWKEGRVLLHKSLKLYQVIF EGEIGKGNLGGIAVDDISINNHISQEDCAKPADLDKKNPEIKI DETGSTPGYEGEGEGDKNISRKPGNVLKTLEPILITIIAMSAL GVLLGAVCGVVLYCACWHNGMSERNLSALENYNFELVDGVKLK KDKLNTQSTYSEA
547	1286	3	521	HEGSALTWASHYQERLNSEQSCLNEWTAMADLESLRPPSAEPG GSVCGGEGLGGGEGRIMQWGAWWRGERAP*LRGSAPRSSEQEQ MEQAIRAELWKVLDVSDLESVTSKEIRQALELRLGLPLQ/PVP *LHRQPDAAAGGTAGPSLPHLPPPLPGLRVERSKPGGAAEEQV GL
548	1287	1742	1200	MAALDLRAELDSLVLQLLGDLEELEGKRTVLNARVEEGWLSLA KARYAMGAKSVGPLQYASHMEPQVCLHASEAQEGLQKFKVVRA GVHAPEEVGPREAGLRRRKGPTKTPEPESSEAPQDPLNWFGIL VPHSLRQAQASFRDGLQLAADIASLQNRIDWGRSQLRGLQEKL KQLEPGAA*

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
549	1288	1	649	HSDVGAATAVLPLLTAVLGVTVVTRRDTEGPGRAALVHLTGSP RQKVGTSGREGLPGLGASCAESELERETQEPRSRGRCIFGAAR WRQVPLASPQRPFLLSPGPRLHRMGLPVSWAPPALWVLGCCAL LLSLWALCTACRRPEDAVAPRKRARRQRARLQGSATAAEAVSA KLSRGPGWGPQGTDQPSSPPVPTEADPPLLPQQVGHQTARAAP G
550	1289	433	632	LTGPGQRLAGTTEGPRRCRGSSQAPTPTWKLVDTRLCAAAPWL ASRAPGHYSQMLLVN*PCRKDWLVSKWMRTPVCGQSPAMTDRP RSEAGRDHRRAKALPGLIPGSNPNLEACGHQALCSSSVASVQG PWPLLPNASSPPTPGQPQP
551	1290	102	612	KHRLCSLEQLMTLISAAREYEIEFIYAISPGLDITFSNPKEVS TLKRKLDQVSQFGCRSFALLFDDIDHNMCAADKEVFSSFAHAQ VSITNEIYQYLGEPETFLFCPT/EYCI*WLYI*LVFLEYITYK GPWAPFSLHFPPPLVCKSRNLFLEDIFQDPKLEKF*ELINDN
552	1291	269	565	TSALTQGLERIPDQLGYLVLSEGAVLASSGDLENDEQAASAIS ELVSTACGFRLHRGMNVPFKRLSVVFGEHTLLVTVSGQRVFVV KRQNRGREPIDV
553	1292	660	233	AKRAERTSRLQGLQHPSPPYPPATLGVTPGQDRTLQLQHQCPA GRKSRKKKSKATQLSPEDRVEDALPPSKAPSRTRRAKRDLPKR TATQRPEGTSLQQDPEAPTVPKKGRRKGRQAASGHCRPRKVKA DIPSLEPEGTSAS
554	1293	590	323	RKSSWLGAVAHACNPSSLGGPGRQITRSGVRDQPGQYGETPSL LKIQTLAGRGGACL*SHILRRLRQKNRLNLGGRGCSELRSRHC APA
555	1294	1	242	AWNSARGAVSPLWVPGCFLTLSVTWIGAAPLILSRIVGGWECE KHSQPWQVLVASRGRAVCGGVLVHPQWVLTAAHCIRK
556	1295	1074	230	AEMADDLGDEWWENQPTGAGSSPEASDGEGEGDTEVMQQETVP VPVPSEKTKQPKECFLIQPKERKENTTKTRKRRKKKITDVLAK SEPKPGLPEDLQKLMKDYYSSRRLVIELEELNLPDSCFLKAND LTHSLSSYLKEICPKWVKLRKNHSEKKSVLMLIICSSAVRALE LIRSMTAFRGDGKVIKLFAKHIKVQAQVKLLEKRVVHLGVGTP GRIKELVKQGGLNLSPLKFLVFDWNWRDQKLRRMMDIPEIRKE VFELLEMGVLSLCKSESLKLGLF
557	1296	929	289	RPGTAIWVVECEHGRPIAESEGQEGRGHSPPGPCSVAGFLRGR LGRNLEIMGSTWGSPGWVRLALCLTGLVLSLYALHVKAARARD RDYRALCDVGTAISCSRVFSSRWGRGFGLVEHVLGQDSILNQS NSIFGCIFYTLQLLLGCLRTRWASVLMLLSSLVSLAGSVYLAW ILFFVLYDFCIVCITTYAINVSLMWLSFRKVQEPQGKAKRH

SEQ ID. NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
558	1297	2	1063	ESPAPPAFRPAMAAVALMPPPLLLLLLLLASPPAASAPSARDPF APQLGDTQNCQLRCRDRDLGPQPSQAGLEGASESPYDRAVLIS ACERGCRLFSICRFVARSSKPNATQTECEAACVEAYVKEAEQQ ACSHGCWSQPAEPEPEQKRKVLEAPSGALSLLDLFSTLCNDLV NSAQGFVSSTWTYYLQTDNGKVVVFQTQPIVESLGFQGGRLQR VEVTWRGSHPEALEVHVDPVGPLDKVRKAKIRVKTSSKAKVES EEPQDNDFLSCMSRRSGLPRWILACCLFLSVLVMLWLSCSTLV TAPGQHLKFQPLTLEQHKGFMMEPDWPLYPPPSHACEDSLPPY KLKLDLTKL
559	1298	2	485	FPELGTSLSAMRFLAATFLLLALSTAAQAEPVQFKDCGSVDGV IKEVNVSPCPTQPCQLSKGQSYSVNVTFTSNIQSKSSKAVVHG ILMGVPVPFPIPEPDGCKSGINCPIQKDKTYSYLNKLPVKSEY PSIKLVVEWQLQDDKNQSLFCWEIPVQIVSHL
560	1299	1304	919	APETFRCVWRLQGLTFIAFTELQAKVIDTQQKVKLADIQIEQL NRTKKHAHLTDTEIMTLVDETNMYEGVGRMFILQSKEAIHSQL LEKQKIAEEKIKELEQKKSYLERSVKEAEDNIREMLMARRAQ
561	1300	3	799	HSLLLGTRVRDASSKIQGEYTLTLRKGGNNKLSRVFHRDGHYG FSEPLTFCSVVDLINHYRHESLAQYNAKLDTRLLYPVSKYQQV RAGLGAREGSTWLAPGLSFLGRPDQAMHLPSFRHVSP\DQIVK EDSVEAVGAQLKVYHQQYQDKSREYDQLYEEYTRTSQELQMKR TAIEAFNETIKIFEEQGQTQEKCSKEYLERFRREGN/QTKEMQ RILLNSERLKSRIA\EIHESPHRSWEQQLLVPRASDNKRD/ID KPH*TSLKPDL
562	1301	1772	301	AAAAAGRGRSSGRRRRRRPGALFASLGVLLGPRPPPGIPRTRA CSMGGVGEPGPREGPAQPGAPLPTFCWEQIRAHDQPGDKWLVI ERRVYDISRWAQRHPGGSRLIGHHGAEDATDAFRAFHQDLNFV RKFLQPLLIGELAPEEPSQDGPLNAQLVEDFRALHQAAEDMKL FDASPTFFAFLLGHILAMEVLAWLLIYLLGPGWVPSALAAFIL AISQAQSWCLQHDLGHASIFKKSWWNHVAQKFVMGQLKGFSAH WWNFRHFQHHAKPNIFHKDPDVTVAPVFLLGESSVEYGKKKRR YLPYNQQHLYFFLIGPPLLTLVNFEVENLAYMLVCMQWADLLW AASFYARFFLSYLPFYGVPGVLLFFVAVRVLESHWFVWITQMN HIPKEIGHEKHRDWVSSQLAATCNVEPSLFTNWFSGHLNFQIE HHLFPRMPRHNYSRVAPLVKSLCAKHGLSYEVKPFLTALVDIV RSLKKSGDIWLDAYLHQ
563	1302	424	93	KSRATRLRESAEMTGFLLPPASRGTRRSCSRSRKRQTRRRRNP SSFVASCPTLLPFACVPGASPTTLAFPPVVLTGPSTDGIPFAL SLQRVPFVLPSPQVASLPLGHSRG
564	1303	1	414	IQYRSDLELHSITMKKSGVLFLLGIILLVLIGVQGTPVVRKGR CSCISTNQGTIHLQSLKDLKQFAPSPSCEKIEIIATLKNGVQT CLNPDSADVKELIKKWEKQVSQKKKQKNGKKHQKKKVLKVRKS QRSRQKKTT

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
565	1304	7	3007	IPGSTISCRGCCGKWPVQEADPPRAALRGRFPALLTRHCPSPR AEKEKRSLRRCGCRPLLVELAGPAGQAVEVLPHFESLGKQEKI PNKMSAFRNHCPHLDSVGEITKEDLIQKSLGTCQDCKVQGPNL WACLENRCSYVGCGESQVDHSTIHSQETKHYLTVNLTTLRVWC YACSKEVFLDRKLGTQPSLPHVRQPHQIQENSVQDFKIPSNTT LKTPLVAVFDDLDIEADEEDELRARGLTGLKNIGNTCYMNAAL QALSNCPPLTQFFLDCGGLARTDKKPAICKSYLKLMTELWYKS RPGSVVPTTLFQGIKTVNPTFRGYSQQDAQEFLRCLMDLLHEE LKEQVMEVEEDPQTITTEETMEEDKSQSDVDFQSCESCSNSDR AENENGSRCFSEDNNETTMLIQDDENNSEMSKDWQKEKMCNKI NKVNSEGEFDKDRDSISETVDLNNQETVKVQIHSRASEYITDV HSNDLSTPQILPSNEGVNPRLSASPPKSGNLWPGLAPPHKKAQ SASPKRKKQHKKYRSVISDIFDGTIISSVQCLTCDRVSVTLET FQDLSLPIPGKEDLAKLHSSSHPTSIVKAGSCGEAYAPQGWIA FFMEYVKRFVVSCVPSWFWGPVVTLQDCLAAFFARDELKGDNM YSCEKCKKLRNGVKFCKVQNFPEILCIHLKRFRHELMFSTKIS THVSFPLEGLDLQPFLAKDSPAQIVTYDLLSVICHHGTASSGH YIAYCRNNLNNLWYEFDDQSVTEVSESTVQNAEAYVLFYRKSS EEAQKERRISNLLNIMEPSLLQFYISRQWLNKFKTFAEPGPI SNNDFLCIHGGVPPRKAGYIEDLVLMLPQNIWDNLYSRYGGGP AVNHLYICHTCQIEAEKIEKRRKTELEIFIRLNRAFQKEDSPA TFYCISMQWFREWESFVKGKDGDPPGPIDNTKIAVTKCGNVML RQGADSGQISEETWNFLQSIYGGGPEVILRPPVVHVDPDILQA EEKIEVETRSL
566	1305	28	450	SPSAAGGLAWVSLALGSGSRGRDHSGSGVGTAMAGALVRKAAD YVRSKDFRDYLMSTHFWGPVANWGLPIAAINDMKKSPEIISGR MTFALCCYSLTFMRFAYKVQPRNWLLFACHATNEVAQLIQGGR LIKHEMTKTASA
567	1306	133	1292	LGSRQAAGTMRGQRSLLLGPARLCLRLLLLLGYRRRCPPLLRG LVQRWRYGKVCLRSLLYNSFGGSDTAVDAAFEPVYWLVDNVIR WFGVVFVVLVIVLTGSIVAIAYLCVLPLILRTYSVPRLCWHFF YSHWNLILIVFHYYQAITTPPGYPPQGRNDIATVSICKKCIYP KPARTHHCSICNRCVLKMDHHCPWLNNCVGHYNHRYFFSFCFF MTLGCVYCSYGSWDLFREAYAAIEKMKQLDKNKLQAVANQTYH QTPPPTFSFRERMTHKSLVYLWFLCSSVALALGALTVWHAVLI SRGETSIERHINKKERRLQAKGRVFRNPYNYGCLDNWKVFLG VDTGRHWLTRVLLPSSHLPHGNGMSWEPPPWVTAHSASVMAV
568	1307	66	962	ATRRRAAEAGMAAVLQRVERLSNRVVRVLGCNPGPMTLQGTNT YLVGTGPRRILIDTGEPAIPEYISCLKQALTEFNTAIQEIVVT HWHRDHSGGIGDICKSINNDTTYCIKKLPRNPQREEIIGNGEQ QYVYLKDGDVIKTEGATLRVLYTPGHTDDHMALLLEEENAIFS GDCILGEGTTVFEDLYDYMNSLKELLKIKADIIYPGHGPVIHN AEAKIQQYISHRNIREQQILTLFRENFEKSFTVMELVKIIYKN TPENLHEMAKHNLLLHLKKLEKEGKIFSNTDPDKKWKAHL

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E=Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
569	1308	96	1017	ELHRAGQVAGGARRSRRESMELERIVSAALLAFVQTHLPEADL SGLDEVIFSYVLGVLEDLGPSGPSEENFDMEAFTEMMEAYVPG FAHIPRGTIGDMMQKLSGQLSDARNKENLQPQSSGVQGQVPIS PEPLQRPEMLKEETRSSAAAAADTQDEATGAEEELLPGVDVLL EVFPTCSVEQAQWVLAKARGDLEEAVQMLVEGKEEGPAAWEGP NQDLPRRLRGPQKDELKSFILQKYMMVDSAEDQKIHRPMAPKE APKKLIRYIDNQVVSTKGERFKDVRNPEAEEMKATYINLKPAR KYRFH
570	1309	3	526	FITGKGIVAILRCLQFNETLTELRFHNQRHMLGHHAEMEIARL LKANNTLLKMGYHFELPGPRMVVTNLLTRNQDKQRQKRQEEQK QQQLKEQKKLIAMLENGLGLPPGMWELLGGPKPDSRMQEFFQP PPPRPPNPQNVPFSQRSEMMKKPSQAPKYRTDPDSFRVVKLKR IQ
571	1310	3	1858	GGRAGTQCCWRAGARLRGISPSPALPEAPGLCRVRAGLGAGAL GRSPAGRRRGPRVSSSPAPHPRRVLCRCLLFLFFSCHDRRGD SQPYQALKYSSKSHPSSGDHRHEKMRDAGDPSPPNKMLRRSDS PENKYSDSTGHSKAKNVHTHRVRERDGGTSYSPQENSHNHSAL HSSNFTFFLIPSN*PQGKTFRIAPYDS\ADDW/SLEHISSSGE KYYYNCRTEVSQWGKTPKSGLERGQRQKEANKMAVNSFPKDRD YRREVMQATATSGFASGKSTSGDKPVSHSCTTPSTSSASGLNP TSAPPTSASA\VPVSP\VPQ\SPIPPLLQDPNLLRQLL\PALE ATLQLNNSNVDI\SIINEVLTGDVTQASLQTIIHKCLTAGPSV FKITSLISQAAQLSTQAQASNQSPMSLTSDASSPR\SYVSPRN KAHLKLNTVPIQTFGFSTPPVSSQPKVSTPVVKQGPVSQSATQ QPVTADKQQGHEPVSPRSLQRSSSQRSPSPGPNHTSNSSNASN ATVVPQNSSARSTCSLTPALAAHFSENLIKHVQGWPADHAEKQ ASRLREEAHNMGTIHMSEICTELKNLRSLVRVCEIQATLREQR ILFLRQQIKELEKLKNQNSFMV
572	1311	2	1165	VAPECRGAYPFRAMMPGTALKAVLLAVLLVGLQTATGRLLSGQ PVCRGGTQRPCYKVIYFHDTSRRLNFEEAKEACRRDGGQLVSI ESEDEQKLIEKFIENLLPSDGDFWIGLRRREEKQSNSTACQDL YAWTDGSISQFRNWYVDEPSCGSEVCVVMYHQPSAPAGIGGPY MFQWNDDRCNMKNNFICKYSDEKPAVPSREAEGEETELTTPVL PEETQEEDAKKTFKESREAALNLAYILIPSIPLLLLLVVTTVV CWVWICRKRKREQPDPSTKKQHTIWPSPHQGNSPDLEVYNVIR KQSEADLAETRPDLKNISFRVCSGEATPDDMSCDYDNMAVNPS ESGFVTLVSVESGFVTNDIYEFSPDQMGRSKESGWVENEIYGY

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SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corre- sponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corre- sponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A = Alanine, C = Cysteine, D = Aspartic Acid, E = Glutamic Acid, F = Phenylalanine, G = Glycine, H = Histidine, I = Isoleucine, K = Lysine, L = Leucine, M = Methionine, N = Asparagine, P = Proline, Q = Glutamine, R = Arginine, S = Serine, T = Threonine, V = Valine, W = Tryptophan, Y = Tyrosine, X = Unknown, * = Stop Codon, / = possible nucleotide deletion, \ = possible nucleotide insertion)
573	1312	3	1416	TEWGLSGSCPGCSPLEPGSRGRGAAAWRILRCRRLPEPSPFLT QPNLAQSQPPAPVPVTDPSVTMHPAVFLSLPDLRCSLLLLVTW VFTPVTTEITSLDTENIDEILNNADVALVNFYADWCRFSQMLH PIFEEASDVIKEEFPNENQVVFARVDCDQHSDIAQRYRISKYP TLKLFRNGMMMKREYRGQRSVKALADYIRQQKSDPIQEIRDLA EITTLDRSKRNIIGYFEQKDSDNYRVFERVANILHDDCAFLSA FGDVSKPERYSGDNIIYKPPGHSAPDMVYLGAMTNFDVTYNWI QDKCVPLVREITFENGEELTEEGLPFLILFHMKEDTESLEIFQ NEVARQLISEKGTINFLHADCDKFRHPLLHIQKTPADCPVIAI DSFRHMYVFGDFKDVLIPGKLKQFVFDLHSGKLHREFHHGPDP TDTAPGEQAQDVASSPPESSFQKLAPSEYRYTLLRDRDEL
574	1313	928	142	LTPSVGPVFPGRPTRPLASPFPVPLHRCSAGSQPPGPVPEGLI RIYSMRFCPYSHRTRLVLKAKDIRHEVVNINLRNKPEWYYTKH PFGHIPVLETSQCQLIYESVIACEYLDDAYPGRKLFPYDPYER ARQKMLLELFCKVPHLTKECLVALRCGRECTNLKAALRQEFSN LEEILEYQNTTFFGGTCISMIDYLLWPWFERLDVYGILDCVSH TPALRLWISAMKWDPTVCALLMDKSIFQGFLNLYFQNNPNAFD FGLC
575	1314	884	363	NTATNMTQPNAGTRKYSVPAISVHTSSSSFAYDREFLRTLPGF LIVAEIVLGLLVWTLIAGTEYFRVPAFGWVMFVAVFYWVLTVF FLIIYITMTYTRIPQVPWTTVGLCFNGSAFVLYLSAAVVDASS VSPERDSHNFNSWAASSFFAFLVTICYAGNTYFSFIAWRSRTI Q
576	1315	165	944	GLRDPFRRKRRLKPQVKMSNYVNDMWPGSPQEKDSPSTSRSGG SSRLSSRSRSRSFSRSSRSHSRVSSRFSSRSRRSKSRSRSRRR HQRKYRRYSRSYSRSRSRSRSRRYRERRYGFTRRYYRSPSRYR SRSRSRSRSRGRSYCGRAYAIARGQRYYGFGRTVYPEEHSRWR DRSRTRSRSRTPFRLSEKDRMELLEIAKTNAAKALGTTNIDLP ASLRTVPSAKETSRGIGVSSNGAKPEVSILGLSEQNFQKANCQ I

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
577	1316	265	2300	AEGSTMDLTKMGMIQLQNPNHPTGLLCKANQMRLAGTLCDVVI MVDSQEFHAHRTVLACTSKMFEILFHRNSQHYTLDFLSPKTFQ QILEYAYTATLQAKAEDLDDLLYAAEILEIEYLEEQCLKMLET IQASDDNDTEATMADGGAEEKKDRKARYLKNIFISKHSSEESG YASVAGQSLPGPMVDQSPSVSTSFGLSAMSPTKAAVDSLMTIG QSLLQGTLQPPAGPEEPTLAGGGRHPGVAEVKTEMMQVDEVPS QDSPGAAESSISGGMGDKVEERGKEGPGTPTRSSVITSARELH YGREESAEQVPPPAEAGQAPTGRPEHPAPPPEKHLGIYSVLPN HKADAVLSMPSSVTSGLHVQPALAVSMDFSTYGGLLPQGFIQR ELFSKLGELAVGMKSESRTIGEQCSVCGVELPDNEAVEQHRKL HSGMKTYGCELCGKRFLDSLRLRMHLLAHSAGAKAFVCDQCGA QFSKEDALETHRQTHTGTDMAVFCLLCGKRFQAQSALQQHMEV HAGVRSYICSECNRTFPSHTALKRHLRSHTGDHPYECEFCGSC FRDESTLKSHKRIHTGEKPYECNGCGKKFSLKHQLETHYRVHT GEKPFECKLCHQRSRDYSAMIKHLRTHNGASPYQCTICTEYCP SLSSMQKHMKGHKPEEIPPDWRIEKTYLYLCYV
578	1317	686	908	IWEAPTLIFTLAGGRALGHPPMQKGSQGCALPHPLPGASLPAQ PGPADHRGWECRIGGEASVFTHLFCLPHSPT
579	1318	150	1204	ASGSPAPSSSSAMAAACGPGAAGYCLLLGLHLFLLTAGPALGW NDPDRMLLRDVKALTLHYDRYTTSRRLDPIPQLKCVGGTAGCD SYTPKVIQCQNKGWDGYDVQWECKTDLDIAYKFGKTVVSCEGY ESSEDQYVLRGSCGLEYNLDYTELGLQKLKESGKQHGFASFSD YYYKWSSADSCNMSGLITIVVLLGIAFVVYKLFLSDGQYSPPP YSEYPPFSHRYQRFTNSAGPPPPGFKSEFTGPQNTGHGATSGF GSAFTGQQGYENSGPGFWTGLGTGGILGYLFGSNRAATPFSDS WYYPSYPPSYPGTWNRAYSPLHGGSGSYSVCSNSDTKTRTASG YGGTRRR
580	1319	1208	276	GRCGAMAAGLARLLLLLGLSAGGPAPAGAAKMKVVEEPNAFGV NNPFLPQASRLQAKRDPSPVSGPVHLFRLSGKCFSLVESTYKY EFCPFHNVTQHEQTFRWNAYSGILGIWHEWEIANNTFTGMWMR DGDACRSRSRQSKVELACGKSNRLAHVSEPSTCVYALTFETPL VCHPHALLVYPTLPEALQRQWDQVEQDLADELITPQGHEKLLR TLFEDAGYLKTPEENEPTQLEGGPDSLGFETLENCRKAHKELS KEIKRLKGLLTQHGIPYTRPTETSNLEHLGHETPRAKSPEQLR GDPGLRGSL
581	1320	1074	132	NSFWSVLFLVQEETEVARCNAQHRLRQSRDSKPDPSFRSQPID SSISFAGSDIQPLFSFASVDGTQVGEAEEWAGPWAEATLLPGP GNRWPPRAGLSGNWLEEDGDWPSLPEVVGFVSERELFRDALGA GCRILLICEMQLTHQLDLFPECRVTLLLFKDVKNAGDLRRKAM EGTIDGSLINPTVIVDPFQILVAANKAVHLYKLGKMKTRTLST EIIFNLSPNNNISEALKKFGISANDTSILIVYIEEGEKQINQE YLISQVEGHQVSLKNLPEIMNITEVKKIYKLSSQEESIGTLLD AIICRMSTKDVL

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582	1321	5021	7694	QRSWAGPGAGPEAGTRPPARGRRRQPGNVDPRRRAPQLRSQMQ VAMARATTATGNRLWPGLLIMLGSLCHRGSPCGLSTHIEIGHR ALEFLQLHNGRVNYRELLLEHQDAYQAGIVFPDCFYPSICKGG KFHDVSESTHWTPFLNASVHYIRENYPLPWEKDTEKLVAFLFG ITSHMAADVSWHSLGLEQGFLRTMGAIDFHGSYSEAHSAGDFG GDVLSQFEFNFNYLARRWYVPVKDLLGIYEKLYGRKVITENVI VDCSHIQFLEMYGEMLAVSKLYPTYSTKSPFLVEQFQEYFLGG LDDMAFWSTNIYHLTIFMLENGTSDCNLPENPLFIACGGQQNH TQGSKMQKNDFHRNLTTSLTESVDRNINYTERGVFFSVNSWTP DSMSFIYKALERNIRTMFIGGSQLSQKHVSSPLASYFLSFPYA RLGWAMTSADLNQDGHGDLVVGAPGYSRPGHIHIGRVYLIYGN DLGLPPVDLDLDKEAHRILEGFQPSGRFGSALAVLDFNVDGVP DLAVGAPSVGSEQLTYKGAVYVYFGSKQGGMSSSPNITISCQD IYCNLGWTLLAADVNGDSEPDLVIGSPFAPGGGKQKGIVAAFY SGPSLSDKEKLNVEAANWTVRGEEDFSWFGYSLHGVTVDNRTL LLVGSPTWKNASRLGHLLHIRDEKKSLGRVYGYFPPNGQSWFT ISGDKAMGKLGTSLSSGHVLMNGTLKQVLLVGAPTYDDVSKVA FLTVTLHQGGATRMYALTSDAQPLLLSTFSGDRRFSRFGGVLH LSDLDDDGLDEIIMAAPLRIADVTSGLIGGEDGRVYVYNGKET TLGDMTGKCKSWITPCPEEKAQYVLISPEASSRFGSSLITVRS KAKNQVVIAAGRSSLGARLSGALHVYSLGSD
583	1322	1	357	SLRNSARGLKMAASAARGAAALRRSINQPVAFVRRIPWTAASS QLKEHFAQFGHVRRCILPFDKETGFHRGLGWVQFSSEEGLRNA LQQENHIIDGVKVQVHTRRPKLPQTSDDEKKDF
584	1323	1205	433	GSSNIHSASTHGFCHWFSSPSTLKRQKQAIRFQKIRRQMEAPG APPRTLTWEAMEQIRYLHEEFPESWSVPRLAEGFDVSTDVIRR VLKSKFLPTLEQKLKQDQKVLKKAGLAHSLQHLRGSGNTSKLL PAGHSVSGSLLMPGHEASSKDPNHSTALKVIESDTHRTNTPRR RKGRNKEIQDLEESFVPVAAPLGHPRELQKYSSDSESPRGTGS GALPSGQKLEELKAEEPDNFSSKVVQRGREFFDSNGNFLYRI
585	1324	134	954	ETRVKTSLELLRTQLEPTGTVGNTIMTSQPVPNETIIVLPSNV INFSQAEKPEPTNQGQDSLKKHLHAEIKVIGTIQILCGMMVLS LGIILASASFSPNFTQVTSTLLNSAYPFIGPFFFIISGSLSIA TEKRLTKLLVHSSLVGSILSALSALVGFIILSVKQATLNPASL QCELDKNNIPTRSYVSYFYHDSLYTTDCYTAKASLAGTLSLML ICTLLEFCLAVLTAVLRWKQAYSDFPGSVLFLPHSYIGNSGMS SKMTHDCGYEELLTS

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586	1325	106	1537	EMVGAMWKVIVSLVLLMPGPCDGLFRSLYRSVSMPPKGDSGQP LFLTPYIEAGKIQKGRELSLVGPFPGLNMKSYAGFLTVNKTYN SNLFFWFFPAQIQPEDAPVVLWLQGGPGGSSMFGLFVEHGPYV VTSNMTLRDRDFPWTTTLSMLYIDNPVGTGFSFTDDTHGYAVN EDDVARDLYSALIQFFQIFPEYKNNDFYVTGESYAGKYVPAIA HLIHSLNPVREVKINLNGIAIGDGYSDPESIIGGYAEFLYQIG LLDEKQKKYFQKQCHECIEHIRKQNWFEAFEILDKLLDGDLTS DPSYFQNVTGCSNYYNFLRCTEPEDQLYYVKFLSLPEVRQAIH VGNQTFNDGTIVEKYLREDTVQSVKPWLTEIMNNYKVLIYNGQ LDIIVAAALTERSLMGMDWKGSQEYKKAEKKVWKIFKSDSEVA GYIRQAGDFHQVIIRGGGHILPYDQPLRAFDMINRFIYGKGWD PYVG
587	1326	883	541	RDERAKVPFRSTEG\GRRRRRRMEAVVFVFSLLDCCALIFLSV YFIITLSDLECDYINARSCCSKLNKWVIPELIGHTIVTVLLLM SLHWFIFLLNLPVATWNIYRYIMVPSGNMGVFDPTEIHNRGQL KSHMKEAMIKLGFHLLCFFMYLYSMILALIND
588	1327	1126	732	QSPGHGAPCQLSSSHSRSNRLLSPMARATLSAAPSNPRLLRVA LLLLLLVAASRRAAGAPLATELRCQCLQTLQGIHLKNIQSVKV KSPGPHCAQTEVIATLKNGQKACLNPASPMVKKIIEKMLKNGK SN
589	1328	197	330	HPLSLVFLALNTGKEKSHPGGGGERPGLAGQGEPDHPAGARDG R
590	1329	1	1575	CTPVARSMATTATCTRFTDDYQLFEELGKGAFSVVRRCVKKTS TQEYAAKIINTKKLSARDHQKLEREARICRLLKHPNIVRLHDS ISEEGFHYLVFDLVTGGELFEDIVAREYYSEADASHCIHQILE SVNHIHQHDIVHRDLKPENLLLASKCKGAAVKLADFGLAIEVQ GEQQAWFGFAGTPGYLSPEVLRKDPYGKPVDIWACGVILYILL VGYPPFWDEDQHKLYQQIKAGAYDFPSPEWDTVTPEAKNLINQ MLTINPAKRITADQALKHPWVCQRSTVASMMHRQETVECLRKF NARRKLKGAILTTMLVSRNFSAAKSLLNKKSDGGVKPQSNNKN SLVSPAQEPAPLQTAMEPQTTVVHNATDGIKGSTESCNTTTED EDLKVRKQEIIKITEQLIEAINNGDFEAYTKICDPGLTSFEPE ALGNLVEGMDFHKFYFENLLSKNSKPIHTTILNPHVHVIGEDA ACIAYIRLTQYIDGQGRPRTSQSEETRVWHRRDGKWLNVHYHC SGAPAAPLQ
591	1330	17	636	NRRTVKMLLELSEEHKEHLAFLPQVDSAVVAEFGRIAVEFLRR GANPKIYEGAARKLNVSSDTVQHGVEGLTYLLTESSKLMISEL DFQDSVFVLGFSEELNKLLLQLYLDNRKEIRTILSEL\APSLP SYHNLEWRLDVQLASRSLRQQIKPAVTIKLHLNQNGDHNTKVL QTDPATLLHLVQQLEQALEEMKTNHCRRVVRNIK
592	1331	1	237	GTSIYLAHRVA\RAWELAQFIHHTSKKADVVLACGDSIVHPED LICCPLTGRSCLCDVHLLSSLLARLGRGYAVSLTNL

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593	1332	2506	1684	RGCGSCGYKPSAGPAWRPRPPPAVSPLRHPEPAKVLSFSSCPL PALGRTGPSRAARAQSLTMASLFKKKTVDDVIKEQNRELRGTQ RAIIRDRAALEKQEKQLELEIKKMAKIGNKEACKVLAKQLVHL RKQKTRTFAVSSKVTSMSTQTKVMNSQMKMAGAMSTTAKTMQA VNKKMDPQKTLQTMQNFQKENMKMEMTEEMINDTLDDIFDGSD DEEESQDIVNQVLDEIGIEISGKMAKAPSAARSLPSASTSKAT ISDEEIERQLKALGVD
594	1333	905	432	STDGNGAERLFAELRKMNARGLGSELKDSIPVTELSASGPFES HDLLRKGFSCVKNELLPSHPLELSEKNFQLNQDKMNFSTLRNI QGLFAPLKLQMEFKAVQQVQRLPFLSSSNLSLDVLRGNDETIG FEDILNDPSQSEVMGEPHLMVEYKLGLL
595	1334	111	117	RNMKLHYVAVLTLAILMFLTWLPESLSCNKALCASDVSKCLIQ ELCQCRPGEGNCSCCKECMLCLGALWDECCDCVGMCNPRNYSD TPPTSKSTVEELHEPIPSLFRALTEGDTQLNWNIVSFPVAEEL SHHENLVSFLETVNQPHHQNVSVPSNNVHAPYSSDK/E*LPTV DFFHSAPSCGLSM*SIIFFEET
596	1335	817	278	VGGVPTWLEGCGSGNPSPRSGGGPGARLTLPALQMTVHNLYLF DRNGVCLHYSEWHRKKQAGIPKEEEYKLMYGMLFSIRSFVSKM SPLDMKDGFLAFQTSRYKLHYYETPTGIKVVMNTDLGVGPIRD VLHHIYSALYVELVVKNPLCPLGQTVQSELFRSRLDSYVRSLP FFSARAG
597	1336	171	881	PGLSQEPSGSMETVVIVAIGVLATIFLASFAALVLVCRQRYCR PRDLLQRYDSKPIVDLIGAMETQSEPSELELDDVVITNPHIEA ILENEDWIEDASGLMSHCIAILKICHTLTEKLVAMTMGSGAKM KTSASVSDIIVVAKRISPRVDDVVKSMYPPLDPKLLDARTTAL LLSVSHLVLVTRNACHLTGGLDWIDQSLSAAEEHLEVLREAAL ASEPDKGLPGPEGFLQEQSAI
598	1337	1078	594	VGMELPAVNLKVILLGHWLLTTWGCIVFSGSYAWANFTILALG VWAVAQRDSIDAISMFLGGLLATIFLDIVHISIFYPRVSLTDT GRFGVGMAILSLLLKPLSCCFVYHMYRERGGELLVHTGFLGSS QDRSAYQTIDSAEAPADPFAVPEGRSQDARGY
599	1338	717	116	PASRPLLGPDTGSVANIFKGLVILPEMSLVIRNLQRVIPIRRA PLRSKIEIVRRILGVQKFDLGIICVDNKNIQHINRIYRDRNVP TDVLSFPFHEHLKAGEFPQPDFPDDYNLGDIFLGVEYIFHQCK ENEDYNDVLTVTATHGLCHLLGFTHGTEAEWQQMFQKEKAVLD ELGRRTGTRLQPLTPGPLPEGAEGRVPF
600	1339	1	804	LRNALDVLHREVPRVLVNLVDFLNPTIMRQVFLGNPDKCPVQQ A/MLEPLGSKTETLDLRAEMPITCPTQNEPFLRTPRNSNYTYP IKPAIENWGSDFLCTEWKASNSVPTSVHQLRPADIKVVAALGD SLTTAVGARPNNSSDLPTSWRGLSWSIGGDGNLETHTTLPNIL KKFNPYLLGFSTSTWEGTAGLNVAAEGARARDMPAQAWDLVER MKNSPDINLEKDWKLVTLFIGGNDLCHYCENPEAHLATEYVQH IQQALDILSE

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601	1340	1	860	VVEFLWSRRPSGSSDPRPRRPASKCQMMEERANLMHMMKLSIK VLLQSALSLGRSLDADHAPLQQFFVVMEHCLKHGLKVKKSFIG QNKSFFGPLELVEKLCPEASDIATSVRNLPELKTAVGRGRAWL YLALMQKKLADYLKVLIDNKHLLSEFYEPEALMMEEEGMVIVG LLVGLNVLDANL\CLKGEDLDSQVGVIDFSLYLKDVQDLDGGK EHERITDVLDQKNYVEELNRHLSCTVGDLQTKIDGLEKTNSKL QERVSAATDRICSLQEEQQQLREQNELIR
602	1341	60	762	KPEGARRVQFVMGLFGKTQEKPPKELVNEWSLKIRKEMRVVDR QIRDIQREEEKVKRSVKDAAKKGQKDVCIVLAKEMIRSRKAVS KLYASKAHMNSVLMGMKNQLAVLRVAGSLQKSTEVMKAMQSLV KIPEIQATMRELSKEMMKAGIIEEMLEDTFESMDDQEEMEEEA EMEIDRILFEITAGALGKAPSKVTDALPEPEPPGAMAASEDEE EEEEALEAMQSRLATLRS
603	1342	3	456	RWNSIMELALLCGLVVMAGVIPIQGGILNLNKMVKQVTGKMPI LSYWPYGCHCGLGGRGQPKDATDWCCQTHDCCYDHLKTQGCGI YKDYYRYNFSQGNIHCSDKGSWCEQQLCACDKEVAFCLKRNLD TYQKRLRFYWRPHCRGQTPGC
604	1343	249	632	KTVAEEASVGNPEGAFMKMLQARKQHMSTELTIESEAPSDSSG INLSGFGSEQLDTNDESDVSSALSYILPYLSLRNLGAESILLP FTEQLFSNVQDGDRLLSILKNNRKSPSQSSLLGNKFKNKIF
605	1344	2	382	LPLTLLLAAPFAHLLLPPGHDQSPCWHPGPALSPGTLGPLSWA MANSGLQLLGYFLALGGWVGIIASTALPQWKQSSYAGDASIQL RSKVFVLESEWGGDSLGLPRDCGWSCLLHSAVRSEKGFWS
606	1345	2	987	DPRVRPPLLQPPPPLLPRLVILKMAPLDLDKYVEIARLCKYLP ENDLKRLCDYVCDLLLEESNVQPVSTPVTVCGDIHGQFYDLCE LFRTGGQVPDTNYIFMGDFVDRGYYSLETFTYLLALKAKWPDR ITLLRGNHESRQITQVYGFYDECQTKYGNANAWRYCTKVFDML TVAALIDEQILCVHGGLSPDIKTLDQIRTIERNQEIPHKGAFC DLVWSDPEDVDTWAISPRGAGWLFGAKVTNEFVHINNLKLICR AHQLVHEGYKFMFDEKLVTVWSAPNYCYRCGNIASIMVFKDVN TREPKLFRAVPDSERVIPPRTTTPYFL
607	1346	10	768	SFAGAAARPSTPPASGRGAAPGRPGPSPMDLRAGDSWGMLACL CTVLWHLPAVPALNRTGDPGPGPSIQKTYDLTRYLEHQLRSLA GTYLNYLGPPFNEPDFNPPRLGAETLPRATVDLEVWRSLNDKL RLTQNYEAYSHLLCYLRGLNRQAATAELRRSLAHFCTSLQGLL GSIAGVMAALGYPLPQPLPGTEPTWTPGPAHSDFLQKMDDFWL LKELQTWLWRSAKDFNRLKKKMQPPAAAVTLHLGAHGF
608	1347	114	700	IKISLKKRSMSGISGCPFFLWGLLALLGLALVISLIFNISHYV EKQRQDKMYSYSSDHTRVDEYYIEDTPIYGNLDDMISEPMDEN CYEQMKARPEKSVNKMQEATPSAQATNETQMCYASLDHSVKGK RRKPRKQNTHFSDKDGDEQLHAIDASVSKTTLVDSFSPESQAV EENIHDDPIRLFGLIRAKREPIN

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609	1348	2	807	VEFHPQRARAGARAPSMGVLLTQRTLLSLVLALLFPSMASMAA IGSCSKEYRVLLGQLQKQTDLMQDTSRLLDPYIRIQGLDVPKL REHCRERPGAFPSEETLRGLGRRCFLQTLNATLGCVLHRLADL EQRLPKAQDLERSGLNIEDLEKLQMARPNILGLRNNIYCMAQL LDNSDTAEPTKAGRGASQPPTPTPASDAFQRKLEGCRFLHGYH RFMHSVGRVFSKWGESPNRSRRHSPHQALRKGVRRTRPSRKGK RLMTRGQLPR
610	1349	2	418	DFPGRRFRLVWLLVLRLPWRVPGQLDPTTGRRFSEHKLCADDE CSMLMYRGEALEDFTGPDCRFVNFKKGDPVYVYYKLARGWPEV WAGSVGRTFGYFPKDLIQVVHEYTKEELQVPTNETDFVCFDGG RDDFHNYNV
611	1350	823	115	SPLGKEGQEEVRVKIKDLNEHIVCCLCAGYFVDATTITECLHT FCKSCIVKYLQTSKYCPMCNIKIHETQPLLNLKLDRVMQDIVY KLVPGLQDSEEKRIREFYQSRGLDRVTQPTGEEPALSNLGLPF SSFDHSKAHYYRYDEQLNLCLERLSSGKDKNKSVLQNKYVRCS VRAEVRHLRRVLCHRLMLNPQHVQLLFDNEVLPDHMTMKQIWL SRWFGKPSPLLLQYSVKEKRR
612	1351	9	545	LWWYSAHAAVDAMMDVFGVGFPSKVPWKKMSAEELENQYCPSR WVVRLGAEEALRTYSQIGIEATTRARATRKSLLHVPYGDGEGE KVDIYFPDESSEATTRARATRKSLLHVPYGDGEGEKVDIYFPD ESSEALPFFLFFHGGYWQSGRHPGPHGRPGDPQRCVCPEAVSK QQAFSW
613	1352	49	902	GVRMASRGRRPEHGGPPELFYDETEARKYVRNSRMIDIQTRMA GRALELLYLPENKPCYLLDIGCGTGLSGSYLSDEGHYWVGLDI SPAMLDEAVDREIEGDLLLGDMGQGIPFKPGTFDGCISISAVQ WLCNANKKSENPAKRLYCFFASLFSVLVRGSRAVLQLYPENSE QLELITTQATKAGFSGGMVVDYPNSAKAKKFYLCLFSGPSTFI PEGLSENQDEVEPRESVFTNERFPLRMSRRGMVRKSRAWVLEK KERHRRQGREVRPDTQYTGRKRKPRF
614	1353	1960	871	TLICRMAGCGEIDHSINMLPTNRKANESCSNTAPSLTVPECAI CLQTCVHPVSLPCKHVFCYLCVKGASWLGKRCALCRQEIPEDF LDKPTLLSPEELKAASRGNGEYAWYYEGRNGWWQYDERTSREL EDAFSKGKKNTEMLIAGFLYVADLENMVQYRRNEHGRRRKIKR DIIDIPKKGVAGLRLDCDANTVNLARESSADGADSVSAQSGAS VQPLVSSVRPLTSVDGQLTSPATPSPDASTSLEDSFAHLQLSG DNTAERSHRGEGEEDHESPSSGRVPAPDTSIEETESDASSDSE DVSAVVAQHSLTQQRLLVSNANQTVPDRSDRSGTDRSVAGGGT VSVSVRSRRPDGQCTVTEV

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615	1354	5653	4549	GATPLGSVGGRTGKMDAATLTYDTLRFAEFEDFPETSEPVWIL GRKYSIFTEKDEILSDVASRLWFTYRKNFPAIGGTGPTSDTGW GCMLRCGQMIFAQALVCRHLGRDWRWTQRKRQPDSYFSVLNAF IDRKDSYYSIHQIAQMGVGEGKSIGQWYGPNTVAQVLKKLAVF DTWSSLAVHIAMDNTVVMEEIRRLCRTSVPCAGATAFPADSDR HCNGFPAGAEVTNRPSPWRPLVLLIPLRLGLTDINEAYVETLK HCFMMPQSLGVIGGKPNSAHYFIGYVGEELIYLDPHTTQPAVE PTDGCFIPDESFHCQHPPCRMSIAELDPSIAVVRGGHLSTQAF GAECCLGMTRKTFGFLRFFFSMLG
616	1355	416	65	PTTSNRAITLTAWPKIPFLGICEAKNPRSENMRLATILEVACH HLGSGPPPSWELWEQGPPGNSSRYIEFLNKHTYIKGTLRVYTK KFCMLVIKSFESKSCVCVYDFDSKSSVNVTV
617	1356	2	382	PRVRFRLLHVTSIRSAWILCGIIWILIMASSIMLLDSGSEQNG SVTSCLELNLYKIAKLQTVNYIALVVGCLLPFFTLSICYLLII RVLLKVEVPESGLRVSHRKALTTIIITLIIFFLCFLPYHT
618	1357	3	672	GRHWLGSAQLTDGGSARKPKMAVPAALILRESPSMKKAVSLIN AIDTGRFPRLLTRILQKLHLKAESSFSEEEEEKLQAAFSLEKQ DLHLVLETISFILEQAVYHNVKPAALQQQLENIHLRQDKAEAF VNTWSSMGQETVEKFRQRILAPCKLETVGWQLNLQMAHSAQAK LKSPQAVLQLGVNNEDSKSLEKVLVEFSHKELFDFYNKLETIQ AQLDSLT
619	1358	557	208	EASSAKTKRKEEKGPKAKMKLMVLVFTIGLTLLLGVQAMPANR LSCYRKILKDHNCHNLPEGVADLTQIDVNVQDHFWDGKGCEMI CYCNFSELLCCPKDVFFGPKISFVIPCNNQ
620	1359	335	1735	KMAEAVFHAPKRKRRVYETYESPLPIPFGQDHGPLKEFKIFRA EMINNNVIVRNAEDIEQLYGKGYFGKGILSRSRPSFTISDPKL VAKWKDMKTNMPIITSKRYQHSVEWAAELMRRQGQDESTVRRI LKDYTKPLEHPPVKRNEEAQVHDKLNSGMVSNMEGTAGGERPS VVNGDSGKSGGVGDPREPLGCLQEGSGCHPTTESFEKSVREDA SPLPHVCCCKQDALILQRGLHHEDGSQHIGLLHPGDRGPDHEY VLVEEAECAMSEREAAPNEELVQRNRLICRRNPYRIFEYLQLS LEEAFFLVYALGCLSIYYEKEPLTIVKLWKAFTVVQPTFRTTY MAYHYFRSKGWVPKVGLKYGTDLLLYRKGPPFYHASYSVIIEL VDDHFEGSLRRPLSWKSLAALSRVSVNVSKELMLCYLIKPSTM TDKEMESPECMKRIKVQEVILSRWVSSRERSDQDDL

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621	1360	5693	4435	RDIWTMNLQRYWGEIPISSSQTNRSSFDLLPREFRLVEVHDPP LHQPSANKPKPPTMLDIPSEPCSLTIHTIQLIQHNRRLRNLIA TAQAQNQQQTEGVKTEESEPLPSCPGSPPLPDDLLPLDCKNPN APFQIRHSDPESDFYRGKGEPVTELSWHSCRQLLYQAVATILA HAGFDCANESVLETLTDVAHEYCLKFTKLLRFAVDREARLGQT PFPDVMEQVFHEVGIGSVLSLQKFWQHRIKDYHSYMLQISKQL SEEYERIVNPEKATEDAKPVKIKEEPVSDITFPVSEELEADLA SGDQSLPMGVLGAQSERFPSNLEVEASPQASSAEVNASPLWNL AHVKMEPQESEEGNVSGHGVLGSDVFEEPMSGMSEAGIPQSPD DSDSSYGSHSTDSLMGSSPVFNQRCKKRMRKI
622	1361	15	678	REQILFIEIRDTAKGGETEQPPSLSPLHGGRMPEMGEGIQSLA RETQSHRGRRQGWDATWVTRCRESLNRGGAGAGKRAGALAHHV FLALIEPNLAEREASEEEVKACSDETVVADLLVKVVYVLGAIL KIFLREGNVLNQHSGMDIEKYSEHYQHDHSPGAEDDAAGGQLR PTAQERRHKEGSRGSPRCKRARKAVGESPGCPRPRVRPRVRPR VRPRV
623	1362	1080	835	GTRGCCREGTAYAKAYQFMASHLSLGKPVSTGSIPRFNKALFN KQAKCKPNHYSFIGLSMLSPENFSIGCKYSVWFSETKGF .
624	1363	872	441	GAQGVRVGIGEVGRVQAPRVSLLHSQGVPRGGTGEAVKEEGRG SSLHPPLPPQGLGEYAACQSHAFMKGVFTFVTGTGMAFGLQMF IQRKFPYPLQWSLLVAVVAGSVVSYGVTRVESEKCNNLWLFLE TGQLPKDRSTDQRS
625	1364	1	585	GTSELLCIQRWNWGPAFPPRPGLALAPTLQLLVEMGSAKSVPV TPARPPPHNKHLARVADPRSPSAGILRTPIQVESSPQPGLPAG EQLEGLKHAQDSDPRSPLGKN*GHGWQVGQGSDLGSPQPLPPS ASHL/YSSRASRCSQPPCLSLPWFGVRSSPANTYHVPVTSLCP SPALHYTALQAGIISTSQARAPR
626	1365	36	381	PLLLPRFIDIPCLLCYLTQVTPDDMYAKAFLIKPNTAITGTDR RKL\RADETTDFP\TLGTDQIYELLPGKDELNIVKSNAHKRDA *TAYVSGENHILSEP*KNLYPAVNTLSSYP
627	1366	763	1003	SRQPPPLLTMVFLLEFLFLVFFPGCVNQLLLSYPWQGQGTSLW SSLSFHWLLPQEDSSRLSIFPLRAGSPPQPAQAPQRI
628	1367	296	1199	KSREQSSLFAADAERSWGGKSCCLLRWRFVGKASHFPRLLPLP GEERPETKERAWKMEQTWTRDYFAEDDGEMVPRTSHTA/ASVS LTAFLSDTKDRGPPVQSQIWRSGEKVPFVQTYSLRAFEKPPQV QTQALRDFEKHLNDLKKENFSLKLLIYFLEERMQQKYEASRED IYKRNTELKVEVESLKRELQDKKQHLDKTWADVENLNSQNEAE LRRQFEERQQEMEHVYELLENKMQLLQEESRLAKNEAARMAAL VEAEKECNLELSEKLKGVTKNWEDVPGDQVKPDQYTEALAQRD K

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629	1368	191	1116	TRRRGTTWRSPRPRRASTSRPSTRPRGVASWPWETAGTATTGP GPSARTRRRAARRRSRPRRRAHGGLSQPAGWQSLLSFTILFL AWLAGFSSRLFAVIRFESIIHEFDPWFNYRSTHHLASHGFYEF LNWFDERAWYPLGRIVGGTVYPGLMITAGLIHWILNTLNITVH IRDVCVFLAPTFSGLTSISTFLLTRELWNQGAGLLAACFIAIV PGYISRSVAGSFDNEGIAIFALQFTYYLWVKSVKTGSVFWTMC CCLSYFYMVSAWGGYVFIINLIPLHAFVLVLM/Q/RYSKRVYI *YSTFYIVG
630	1369	852	214	RRLIVVLSDAFLSRAWCSHSF/RVGPARGWVGPSVAPTPLTVP PRREGLCRLLELTRRPIFITFEGQRRDPAHPALRLLRQHRHLV TLLLWRPGSVTPSSDFWKEVQLALPRKVRYRPVEGDPQTQLQD DKDPMLILRGRVPEGRALDSEVDPDPEGDLGVRGPVFGEPSAP PHTSGVSLGESRSSEVDVSDLGSRNYSARTDFYCLVSKDDM
631	1370	246	1091	LSHEGWRRGREGERINSSVASLAPLCILPDLPSNMHLARLVGS CSLLLLLGALSGWAASDDPIEKVIEGINRGLSNAEREVGKALD GINSGITHAGREVEKVFNGLSNMGSHTGKELDKGVQGLNHGMD KVAHEINHGIGQAGKEAEKLGHGVNNAAGQAGKEADKAVQGFH TGVHQAGKEAEKLGQGVNHAADQAGKEVEKLGQGAHHAAGQAG KELQNAHNGVNQASKEANQLLNGNHQSGSSSHQGGATTTPLAS GASVNTPFINLPALWRSVANIMP
632	1371	3150	2792	SASGGLGMTVEGPEGSEREHRPPEKPPRPPRPLHLSDRSFRRK KDSVESHPTWVDDTRIDADAIVEKIVQSQDFTDGSNTEDSNLR LFVSRDGSATLSGIQLATRVSSGVYEPVVIESH
633	1372	667	993	ERSGWPQPEGTVTAQGPLFWERLSGAVTVSSGYKADMWPSFPQ \VRVGSFLFGILFFSFGSSSLPPGLPPPASLLCCAVQWGARAL FLPCLKERALGMEMRNNTLSFRQ
634	1373	636	2	SSSNLRLSFLINENILGKCFRSGPSCAGPRISPLAAQYECPRP SLLIMASVPKTNKIEPRSYSIIPSCGI\RRLGPALNTLIF\QS KRFGPRG\HSAKSIEGAPRGKGRGRAVARLAADRPPAPKIQLR AF*LQQL*YTLLELELPRLLAPDLPSNGSSLKDLKWTHSNYRA SKESCIVIF\VTTSPGREWVICALAAFLGCGS\LSQAPSPES
635	1374	61	519	LRIINTYFCFKFLIVNYIHGTTKARKPHVLGESLISAMSRQEP KMFVLLYVTSFAICASGQPRGNQLKGENYSPRYICSIPGLPGP PGPPGANGSPGPHGRIGLPGRDGRDGRKGEKGEKGTAGLRGKT GPLGLAGEKGDQGETGKKGPIGPE
636	1375	129	579	FASAMLGSRVDRPKLSVAPSVVLEEDQVLVSPAVDLEAGCRLR DFTEKIMNVKGKVILSMLVVSTVIIVFWEFINSTEGSFLWIYH SKNPEVDDSSAQKGWWFLSWFNNGIHNYQQGEEDIDKEKGREE TKGRKMTQQSFGYGTGLIQT

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637	1376	127	1376	GSHRFSLASPLDPEVGPYCDTPTMRTLFNLLWLALACSPVHTT LSKSDAKKAASKTLLEKSQFSDKPVQDRGLVVTDLKAESVVLE HRSYCSAKARDRHFAGDVLGYVTPWNSHGYDVTKVFGSKFTQI SPVWLQLKRRGREMFEVTGLHDVDQGWMRAVRKHAKGLHIVPR LLFEDWTYDDFRNVLDSEDEIEELSKTVVQVAKNQHFDGFVVE VWNQLLSQKRVGLIHMLTHLAEALHQARLLALLVIPPAITPGT DQLGMFTHKEFEQLAPVLDGFSLMTYDYSTAHQPGPNAPLSWV RACVQVLDPKSKWRSKILLGLNFYGMDYATSKDAREPVVGARY IQTLKDHRPRMVWDSQVSEHFFEYKKSRSGRHVVFYPTLKSLQ VRLELARELGVGVSIWELGQGLDYFYDLL
638	1377	998	48	GREGTGWGPAMSEVTRSLLQRWGASFRRGADFDSWGQLVEAID EYQILARHLQKEAQAQHNNSEFTEEQKKTIGKIATCLELRSAA LQSTQSQEEFKLEDLKKLEPILKNILTYNKEFPFDVQPVPLRR ILAPGEEENLEFEEDEEEGGAGAGSPDSFPARVPGTLLPRLPS EPGMTLLTIRIEKIGLKDAGQCINPYITVSVKDLNGIDLTPVQ DTPVASRKEDTYVHFNVDIELQKHVEKLTKGAAIFFEFKHYKP KKRFTSTKCFAFMEMDEIKLGPIVIELYKKPTDFKRKQLQLLT KKPLYLHLHQTLHKE
639	1378	1298	1569	GSITSEPSLDSLQPLPPGFKRFSCLSLPSSWDYRRPPPGLAYF CIFSRDEVSPCWPGCSPSPDLMIRLPRPPSVGITGVSHRAWPT IDNF
640	1379	196	1197	KMPVPWFLLSLALGRSPVVLSLERLVGPQDATHCSPGLSCRLW DSDILCLPGDIVPAPGPVLAPTHLQTELVLRCQKETDCDLCLR VAVHLAVHGHWEEPEDEEKFGGAADSGVEEPRNASLQAQVVLS FQAYPTARCVLLEVQVPAALVQFGQSVGSVVYDCFEAALGSEV RIWSYTQPRYEKELNHTQQLPDCRGLEVWNSIPSCWALPWLNV SADGDNVHLVLNVSEEQHFGLSLYWNQVQGPPKPRWHKNLVRP PPSQVHSHCRP\CLCK\DAVPYQRGSLKRTHPKQGKIGGGTSA FLVSLTLASSSSSLSSPTSFLYLFHRLDRRSLP
641	1380	756	1110	LRLWNRNQMMHNIIVKELIVTFFLGITVVQMLISVTGLKGVEA QNGSESEVFVGKYETLVFYWPSLLCLAFLLGRFLHMFVKALRV HLGWELQVEEKSVLEVHQGEHVKQLLRIPRP
642	1381	631	1278	KVNRKLRKKGKISHDKRKKSRSKAIGSDTSDIVHIWCPEGMKT SDIKELNIVLPEFEKTHLEHQQRIESKVCKAAIATFYVNVKEQ FIKMLKESQMLTNLKRKNAKMISDIEKKRQRMIEVQDELLRLE PQLKQLQTKYDELKERKSSLRNAAYFLSNLKQLYQDYSDVQAQ EPNVKETYDSSSLPALLFKARTLLGAESHLRNINHQLEKLLDQ G
643	1382	1167	755	VWVAMEEPPVREEE*EEGEEDEERDEVGPEGALGKSPFQLTAE DVYDISYLLGRELMALGSDPRVTQLQFKVVRVLEMLEALVNEG SLALEELKMERDHLRKEVEGLRRQSPPASGEWPDSTKRRPRRK KRKRCCGY

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644	1383	1	271	PRNDHRLTQSRRDSSSKTRAFLVPRFLPAHAGVTSEERTAMKR EGGAAHLCSDSLPESQQQDGNHAPNFSSHGSCRRRQRRRHDKA LHAR
645	1384	1	499	THASEKSRATMSSWSRQRPKSPGGIQPHVSRTLFLLLLLAASA WGVTLSPKDCQVFRSDHGSSISCQPPAEIPGYLPADTVHLAVE FFNLTHLPANLLQGASKLQELHLSSNGLESLSPEFLRPVPQLR VLDLTRNALTGLPPGLFQASATLDTLVLKENQLEVLE
646	1385	178	675	ERPRIMDLAGLLKSQFLCHLVFCYVFIASGLIINTIQLFTLLL WPINKQLFRKINCRLSYCISSQLVMLLEWWSGTECTIFTDPRA YLKYGKENAIVVLNHKF\EI\DFLCGWSLSERFGLLGVSQKCI PPCLTHFFGSAPPLVFLLLVIQNLQKNQQSFYLMKWS
647	1386	630	1499	MIVFGWAVFLASRSLGQGLLLLTLEEHIAHFLGTGGAATTMGNS CICRDDSGTDDSVDTQQQQAENSAVPTADTRSQPRDPVRPPRR GRGPHEPRRKKQNVDGLVLDTLAVIRTLVDNDQEPPYSMITLH EMAETDEGWLDVVQSLIRVIPLEDPLGPAVITLLLDECPLPTK DALQKLTEILNLNGEVACQDSSHPAKHRNTSAVLGCLAEKLAG PASIGLLSPGILEYLLQCLLQSHPTVMLFALIALEKFAQTSEN KLTISESSISDRL\VTLESW\ANDPDYLKRQVG
648	1387	1	962	RFGTRGLAKSKGVVLMALCALTRALRSLNLAPPTVAAPAPSLF PAAQMMNNGLLQQPSALMLLPCRPVLTSVALNANFVSWKSRTK YTITPVKMRKSGGRDHTGRIRVHGIGGGHKQRYRMIDFLRFRP EETKSGPFEEKVIQVRYDPCRSADIALVAGGSRKRWIIATENM QAGDTILNSNHIGRMAVAAREGDAHPLGALPVGTLINNVESEP GRGAQYIRAAGTCGVLLRKVNGTAIIQLPSKRQMQVLETCVAT VGRVSNVDHNKRVIGKAGRNRWLGKRPNSGRWHRKGGWAGRKI RPLPPMKSYVKLPSASAQS
649	1388	291	714	PVQGARCWLDARRNVRVFSGVCCGCGIHGYWAEPCGGCGAMEG LRSSVELDPELTPGKLDEEMVGLPPHDASPQVTFHSLDGKTVV CPHFMGLLLGLLLLLTLSVRNQLCVRGERQLAETLHSQVKEKS QLIGKKTDCRD
650	1389	874	2220	GARGRPLAETWPFLTAPVLPGQLQITEPTMAEKGDCIASVYGY DLGGRFVDFQPLGFGVNGLVLSAVDSRACRKVAVKKIALSDAR SMKHALREIKIIRRLDHDNIVKVYEVLGPKGTDLQGELFKFSV AYIVQEYMETDLARLLEQGTLAEEHAKLFMYQLLRGLKYIHSA NVLHRDLKPANIFISTEDLVLKIGDFGLARIVDQHYS\HKGYL SEGLVTKWYRSPRLLLSPNNYTKAIDMWAAGCILAEMLTGRML FAGAHELEQMQLILETIPVIREEDKDELLRVMPSFVSSTWEVK RPLRKLLPEVNSEAIDFLEKILTFNPMDRLTAEMGLQHPYMSP YSCPEDEPTSQHPFRIEDEIDDIVLMAANQSQLSNWDTCSSRY PVSLSSDLEWRPDRCQDASEVQRDPRAGSAPLAENVQVDPRKD SHSSSASCQAGRNGVSRYQ

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651	1390	1	2451	MRTLGTCLATLAGLLLTAAGETFSGGCLFDEPYSTCGYSQSEG DDFNWEQVNTLTKPTSDPWMPSGSFMLVNASGRPEGQRAHLLL PQLKENDTHCIDFHYFVSSKSNSPPGLLNVYVKVNNGPLGNPI WNISGDPTRTWNRAELAISTFWPNFYQVIFEVITSGHQGYLAI DEVKVLGHPCTRTPHFLRIQNVEVNAGQFATFQCSAIGRTVAG DRLWLQGIDVRDAPLKEIKVTSSRRFIASFNVVNTTKRDAGKY RCMI\RTEGGVGISNYAEL\VVKEPPVPIAPPQLASVGATYLW IQLNANSINGDGPIVAREVEYCTASGSWNDRQPVDSTSYKIGH LDPDTEYEISVLLTRPGEGGTGSPGPALRTRTKCADPMRGPRK LEVVEVKSRQITIRWEPFGYNVTRCHSYNLTVHYCYQVGGQEQ VREEVSWDTENSHPQHTITNLSPYTNVSVKLILMNPEGRKESQ ELIVQTDEDLPGAVPTESIQGSTFEEKIFLQWREPTQTYGVIT LYEITYKAVSSFDPEIDLSNQSGRVSKLGNETHFLFFGLYPGT TYSFTIRASTAKGFGPPATNQFTTKISAPSMPAYELETPLNQT DNTVTVMLKPAHSRGAPVSVYQIVVEEERPRRTKKTTEILKCY PVPIHFQNASLLNSQYYFAAEFPADSLQAAQPFTIGDNKTYNG YWNTPLLPYKSYRIYFQAASRANGETKIDCVQVATKGAATPKP VPEPEKQTDHTVKIAGVIAGILLFVIIFLGVVLVMKKRLYKHG ASICSASGEASGSFQSWRKAKHKQACPMARAGARERAGGCLKL
652	1391	30	459	GIRQLLQLSRASMAARKSWTALRLCATVVVLDMVVCKGFVQDL DESFKENRNDDIWLVHFYAPWCGHCKKLEPIWNEAGLEMKSIG SPVKAGKMDATSYSSIASEFGVRGYPTIKLALIRPLPSQQMFE HMHKRHRVFFVYV
653	1392	168	1016	GLVIVISHFSPSPGLLPATQSPAMSDPITLNVGGKLYTTSLAT LTSFPDSMLGAMFSGKMPTKRDSQGNCFIDRDGKVFRYILNFL RTSHLDLPEDFQEMGLLRREADFYQVQPLIEALQEKEVELSKA EKNAMLNITLNQRVQTVHFTVREAPQIYSLSSSSMEVFNANIF STSCLFLKLLGSKLFYCSNGNLSSITSHLQDPNHLTLDWVANV EGLPEEEYTKQNLKRLWVVPANKQINSFQVFVEEVLKIALSDG FCIDSSHPHALDFMNNKIIRLIRY
654	1393	3	927	SCADNLVAASGGCWFVLGERRAGSLLSASYGTFAMPGMVLFGR RWAIASDDLVFPGFFELVVRVLWWIGILTLYLMHRGKLDCAGG ALLSSYLIVLMILLAVVICTVSAIMCVSMRGTICNPGPRKSMS KLLYIRLALFFPEMVWASLGAAWVADGVQCDRTVVNGIIATVV VSWIIIAATVVSIIIVFDPLGGKMAPYSSAGPSHLDSHDSSQL LNGLKTAATSVWETRIKLLCCCIGKDDHTRVAFSSTAELFSTY FSDTDLVPSDIAAGLALLHQQQDNIRNNQ\DLPRWSAMPQGAP RKLIWMQN
655	1394	1	716	FRAATAAAKGNGGGGGRAGAGDASGTRKKKGPGPLATAYLVIY NVVMTAGWLVIAVGLVRAYLAKGSYHSLYYSIEKPLKFFQTGA LLEILHCAIGIVPSSVVLTSFQVMSRVFLIWAVTHSVKEVQSE DSVL\FVIAWTITEIIRYSFYTFSLLNHLPYLIKRARYTLFIV LYPMGVSGELLTIYAALPFVRQAGLYSISLPNSTKKIFLISQV WWHMLAVSADAKAAEMPAVLKPGP

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656	1395	72	766	MLTGVGCLVSSESLSCVQCNSWEKSCVNSIASECPSHANTSCI SSSASSSLETPVRLYQNMFCSAENCSEETHITAFTVHVSAEEH FHFVSQCCEGKECSNTSDALDPPLKNVSSNAECPACYESNGTS CRGKPWKCYEEEQCVFLVAELKNDIESKSLVLKGCSNVSNATC QFLSGENKTLGGVIFRKFECANVNSLTPTSAPTTSHNVGSKAS LYLLALASLLLRGLLP
657	1396	97	746	VPARRRAMEIGTEISRKIRSAIKGKLQELGAYVDEELPDYIMV MVANKKSQDQMTEDLSLFLGNNTIRFTVWLHGVLDKLRSVTTE PSSLKSSDTNIFDSNVPSNKSNFSRGDERRHEAAVPPL\AIPS ARPEKRDSRVSTSSQESKTTNVRQTYDDGAATRLMSTV/KPLR EPAPSEDVIDIKPEPDDLIDEDLNFVQEKPLSQKKPTVTLTYG SSR
658	1397	155	560	ASRVLAAVMGLPWGQPHLGLQMLLLALNWLRPSLSLELVPYTP QITAWDLEGKVTATTFSLEQPRCVFDGLASASDTVWLVVAFSN ASRGFQNPETLADIPASPQLLTDGHYMTLPLSPDQLPCGDPMA GSGSAP
659	1398	416	539	NSLNNFFFETESCCVAQAGVQWRDLGSLQAPPPGFKRFSCL
660	1399	281	736	KSLPLQKHPKPSCQEDQGLGRGSLSGHSPLTLLTFLTSCALGD QQLLPPRTSGSLCQESMSEQSCQMSELRLLLLGKCRSGKSATG NAILGKHVFKSKFSDQTVIKMCQRESWVLRERKVVVIDTPDLF SSIACAEDKQRNIQHLLELSAP
661	1400	2	974	FVETTVSVQSAESSDALSWSRLPRALASVGPEEARSGAPVGGG RWQLSDRVEGGSPTLGLLGGSPSAQPGTGNVEAGIPSGRMLEP LPCWDAAKDLKEPQCPPGDRVGVQPGNSRVWQGTMEKAGLAWT RGTGVQSEGTWESQRQDSDALPSPELLPQDQDKPFLRKACSPS NIPAVIITDMGTQEDGALEETQGSPRGNLPLRKLSSSSASSTG FSSSYEDSEEDISSDPERTLDPNSAFLHTLDQQKPRVVESRSV TQAGVQWHDIGSLQPLPP/WIQAIL/HASAFRIAGTTGACHHA RIIFGFLVERGFHHVGQDGLYLLIL
662	1401	232	3	KICSSYFLRIICILQKEAQEASNLYTSCDFFSPAFYFVIYRLY NFKIHWPGAVAHTYSPSTLGGRGRWVT*GREFM
663	1402	250	556	LILSLPLLYGHLKSYTFPSEHYLHLLQTFATFNKYLNVCVLIF IHHKPVVPAIQGTNVGGSLEPRRLRLQQAMIVPLHFGLGNRVR PCLKKQQQQQQQQQKK
664	1403	1	373	RMETKPVITCLKTLLIIYSFVFWITGVILLAAGVWGKLTLGSY ISLIAENSTYAPYVLIVTGTTIVAYPLV*FFFSYSSGFSYILA VRLIAGIALVYNYIPRSSSRALVRLVVLLRFLLSRHPS
665	1404	3	413	NAEHPGMDRHDLCQKAKLAEHAERDDDMAACMKTVTDQGAELS NEERNLLSDAHTNAV*ARRSSWMGA*RIEQKTEGADTQQQMAP DCREIFATELRDICDDVLSLLEKLLIPNASHA*SLVYYLHMIG DYYRYWL
666	1405	2	334	GGGPLGKMPRAQLADPWQMMAVESPSDCADNGQQIMDEPMGED EISPQTE*VSIKEVAVTHCVKEGHDKADPSQIELLRVLRQGSL GKVYLGKKVSGSDAKQLYAMKVLT

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667	1406	2	332	DAAGIRHEAHFGKLECLVQLVRAGA\SLFVSTTRYAQTPA\HI AAFGGHPQCLVWLIQAGANINKPDCEGETPIHKAARSGSLECI SALVANGAHVDNPKKGIRVLEWLFE \
668	1407	242	1157	LLKLMFIAELGDYDLAEHSPELVSEFRFVPIQTEEMELAIFEK WKEYRGQTPAQAETNYLNKAKWLEMYGVDMHVVKARDGNDYSL GLTPTGVLVFEGDTKIGLFFWPKITRLDFKKNKLTLVVVEDDD QGKEQEHTFVFRLDHPKACKHLWKCAVEHHAFFRLRGPVQKSS HRSGFIRLGSRFRYSGKTEYQTTKTNKARRSTSFERRPSKRYS RRTLQMKACATKPEELSVHNNVSTQSNGSQQAWGMRSALPVSP SISSAPVPVEIENLPQSPGTDQHDRKWLSAASDCCQRGGNQWN TRAL
669	1408	278	1	ATAPGLFNFF*FLFQCREEHKKKNPEVPVNFAEFSKKCSGRWK TMSSKEKFKFGEMAKADEVCYDREMKDYGPAKGGKKKDPNAPK RPPSGF
670	1409	139	646	AEGLGSWAVWAGLGWAGRHMEAGGATGALGVGSKLPSAFCFPG SSVAMDMFQKVEKIGEGTYGVVYKAKNRETGQLVALKKIRLDL *VLGRPLSYPPWAITTWALPDPFPLSWSPRLTPLGAAQQPLPV LSPVHCLLTSLCRGPDCGVWWMTCQGAQVSIAGALVILWG
671	1410	3	442	LCVSVLCSFSYLQNGWTASDPVHGYWFR\AGDHVSRNIPVATN NPVRAVQEETRDRFHLLGDPQNKDCTLSIRDTRESDAGTYVFC VERGNMKWNYKYDQLSVNVTASQDLLSRYRLEVPESVTVQEGL CVSVP/WQCPLPPLQLDCL
672	1411	84	836	QLQLCQNCTKRGECHCVPFDTYIKTKKEKKRLSVLPPTRLMEA RFSPINQILPWCRQDLAISISKAINTQEAPVKEKHARRIILGT HHEKGAFTFWSYAIGLPLPSSSILSWKFCHVLHKVLRDGHPNV LHDCQRYRSNIREIGDLWGHLHDRYGQLVNVYTKLLLTKISFH LKHPQFPAGLEVTDEVLEKAAGTDVNNM*VTLHGYMASSPRLP HSFLPRLTPRRPHGAVGLNESVALLVDAHAPRDRG
673	1412	307	664	AAPHRMPRAPHFMPLLLLLLLLLSLPHTQAAFPQDPLPLLISDL QGTSPLSWLPSLEDDAVAA*LGLDFQRFLTLNRTLLVAARDHV FSFDLQAEEEGEGLVPNKYLTWRSQDVENCAVR*KLTLNRTLL VAARDHVFSFDLQAEEEGEGLVPNKYLTWRSQDVENCAVR
674	1413	24	420	HLVPKTRGRGTPSGDQSPVLTLTP*GDPPTILGPQTNQPKEHL TNFKSGKRSFHSLLQPLLLLLLHPSISPFLNFGSFPFLVETEET CFIHKLKTPALVTPDSLPLVFNHCGDACLIIHPHFRDVEFHHT GN

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675	1414	1	1101	CCSTKNISGDKACNLMIFDTRKTARQPNCYLFFCPNEEACPLK PAKGLMSYRIITDFPSLTRNLPSQELPQEDSLLHGQFSQAVTP ·LAHHHTDYSKPTDISWRDTLSQKFGSSDHLEKLFKMDEASAQL LAYKEKGHSQSSQFSSDQEIAHLLPENVSALPATVAVASPHTT SATPKPATLL\PTNASVTPSGTSQPQLA\TTAPPVTTVTSQPP TTLISTVFTRAAATLQAMATTAVLTTTFQAPTDSKGSLETIPF TEISNLTLNTGNVYNPTALSMSNVESSTMNKTASWEGREASPG SSSQGSVPENQYGLPFEKWLLIGSLLFGVLFLVIGLVLLGRIL SESLRRKRYSRLDYLINGIYVDI
676	1415	178	621	IFAGSGVMRLKISLLKEPKHQELVSCVGWTTAEELYSCSDDHH IVKWNLLTSETTQIVKLPDDIYPIDFHWFPKSLGVKKQTHAES FVLTSSDGKFHLISKLGRVEKSVEAHCGAVLAGRWNYEGTALV TVGEDGQI*IWSKTGMLIS
677	1416	1258	944	ARATTKRHFILLFLFFLRRC\LFLSPRMECNGAILAHCNLHLP GSSSSSASAS*VAGITDVRHHAQLILFVFLVETGFHRVGQAGL KLLTSGDLLTSASQSAGIIMGISHCAQPKKAF*TKTF
678	1417	876	1291	EAGSNDDLAT*KTCGRARPSSRSRQFGSRVWNHRQGVRSSPGE GAGSRSPCRRRHRRKHRRNVQSP*RRRSRSCSRRSGRCSVALL GACPVAGHSRGKVVCRRAHAITQRRRCCGFDPMVHPKEHRG*R ERSRKWSRS
679	1418	262	539	ATAPGLFNFF*FLFQCREEHKKKNPEVPVNFAEFSKKCSGRWK TMSSKEKFKFGEMAKADEVCYDREMKDYGPAKGGKKKDPNAPK RPPSGF
680	1419	104	236	LTVNYVLVFSRDSGLRAIENLMQKKGKFDYILLETTGLADPGK K
681	1420	3	277	HEAALCRTRAVAAERHFLRVFLFFRPFRGVGTESGSESGSSKA KEPRTPSSSYGTAQYRRWPIAQEYKHCTAHNDTGTLCSELREP WRRPQ
682	1421	3	576	EGSSQANTLRSRKENRNNLLACLESHVLR*QFTESHLCSLMGD NPFQPKSNSKMAELFMECEEEELEPWQKKVKEVEDDDDDEPIF VGEISSSKPAISNILNRVNPSSYSRGLKNGALSRGITAAFKPT SQHYTNPTSNPVPASPINFHPESRSSDSSVIGQPFSKPVSVSK TIRPAQGSIGCCLSISTV
683	1422	6	627	CFSLEDILNFFLQGFSAGLFAFYHDKDGNPLTSRFADGLPPFN YSLGLYQWSDKVVRKVERLWDVRDNKIVRHTVYLLVTPRVVEE ARKHFDCPVLEGMELENQGGVGTELNHWEKRLLENEAMTGSHT QNRVLSRITLALMEDTGRQMLSPYCDTLRSNPLQLTCRQDQRA VAV\CNLQKFPKPLPQEYQYFDELSGIPAEDLPYYG

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684	1423	1	1272	AARRRRQLVSRRRTAE\YPRRRRSSPSARPPDVPGQQPKAAKS PSPVQGKKSPRLLCIEKVTTDKDPKEEKEEEDDSALPQEVSIA ASRPSRGWRSSRTSVSRHRDTENTRSSRSKTGSLQLICKSEPN TDQLDYDVGEEHQSPGGISSEEEEEEEEEMLISEEEIPFKDDP RDETYKPHLERETPKPRRKSGKVKEEKEKKEIKVEVEVEVKEE ENEIREDEEPPRKRGRRRKDDKSPRLPKRRKKPPIQYVRCEME GCGTVLAHPRYLQHHIKYQHLLKKKYVCPHPSCGRLFRLQKQL LRHAKHHTDQRDYICEYCARAFKSSHNLAVHRMIHTGEKPLQC EICGFTCRQKASLNWHMKKHDADSFYQFSCNICGKKFEKKDSV VAHKAKSHPEVLIAEALAANAGALITSTDILGTNPES
685	1424	56	526	MTANRLAESLLALSQQEELADLPKDYLLSESEDEGDNDGERKH QKLLEAISSLDGKNRRKLAERSEASLKVSEFNVSSEGSGEKLV LADLLEPVKTSSSLATVKKQLSRVKSKKTVELPLNKEEIERIH REVAFNKTAQVLSKWDPVVLKNRQAEQL*
686	1425	132	344	RIDFMFHSSAMVNSHRKPMFNIHRGFYCLTAILPQICICSQFS VPSSYHFTEDPGAFPVATNGERFPWQELRLPSVVIPLHYDLFV HPNLTSLDFVASEKIEVLVSNATQLIILHSKDLEITNATLQSE EDSRYMKPGKELKVLSYPAHEQIALLVPEKLTPHLKYYVAMDF QAKLGDGFEGFYKSTYRTLGGETRILAVTDFEPTQARMAFPCF DEPLFKANFSIKIRRESRHIALSNMPKVKTIELEGGLLEDHFE TTVKMSTYLVAYI/DL*FPLMGNDFLGRS
687	1426	3	678	RSKIPRSDPRVRTPAPAEAEQGKSQCPSGSTAQSWSAMDILVP LLQLLVLLLTLPLHLMALLGCWQPLCKSYFPYLMAVLTPKSNR KMESKKRELFSQIKGLTGASGKVALLELGCGTGANFQFYPPGC RVTCLDPNPHFEKFLTKSMAENRHLQYERFVVAPGEDMRQLAD GSMDVVVCTLVLCSVQSPRKVLQEVRRVLRPGGVLFFWEHVAE PYGSWAFMW
688	1427	240	641	RLQNSSLMDPKLGRMAASLLAVLLLLLLERGMFSSPSPPPALL EKVFQYIDLHQDEFVQTLKEWVAIESDSVQPVPRFRQELFRMM AVAADTLQRLGARVASVDMGPQQLPDGQSLPIPPVILAELGSD PTKG
689	1428	1	116	FFFFEMESCSVTQAGVPWHDLSSLQPPPPRFKRFSCLS
690	1429	75	511	DPKAQLPEPLRVLWTAHLVAMAPGSRTSLLLAFALLCLPWLQE AGAVQTVPLSRLFDHAMLQAHRAHQLAIDTYQEFEETYIPKDQ KYSFLHDSQTSFCFSDSIPTPSNMEETQQKSNLELLRISLLLI ESWLEPVRILMSIVPN

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691	1430	2	1364	FVKLIKKHQAAMEKEAKVMSNEEKKFQQHIQAQQKKELNSFLE SQKREYKLRKEQLKEELNENQSTPKKEKQEWLSKQKENIQHFQ AEEEANLLRRQRQYLELECRRFKRRMLLGRHNLEQDLVREELN KRQTQKDLEHAMLLRQHESMQELEFRHLNTIQKMRCELIRLQH QTELTNQLEYNKRRERELRRKHVMEVRQQPKSLKSKELQIKKQ FQDTCKIQTRQYKALRNHLLETTPKSEHKAVLKRLKEEQTRKL AILAEQYDHSINEMLSTQALRLDEAQEAECQVLKMQLQQELEL LNAYQSKIKMQAEAQHDRELRELEQRVSLRRALLEQKIEEEML ALQNERTERIRSLLERQAREIEAFDSESMRLGFSNMVLSNLSP EAFSHSYPGASGWSHNPTGGPGPHWGHPMGGPPQAWGHPMQGG PQPWGHPS\GPMQ\GVPR/GSSMGVR
692	1431	50	504	LAHGSFGVSDFPAPAAAPAHTLTSFSGSLSPQFRKPLGRAPAM PLVRYRKVVILGYRCVGKTSLAHQFVEGEFSEGYDPTVENTYS KIVTLGKDEFHLHLVDTAGQDEYSILPYSFIIGVHGYVLVYSV TSLHSFQVIESLYQKLHEGHGK
693	1432	130	1671	SSPSRELCFYGFWIASSWWSRWVGSLGPGILPSPPARGRTFAS VSRLPPPWSAGITLTPFLICQSGSVCPGLGAGFGVRSFHHPVA RSAVLLLPLAPAAAQDSTQASTPGSPLSPTEYERFFALLTPTW KAETTCRLRATHGCRNPTLVQLDQYENHGLVPDGAVCSNLPYA SWFESFCQFTHYRCSNHVYYAKRVLCSQPVSILSPNTLKEIEA SAEVSPTTMTSPISPHFTVTERQTFQPWPERLSNNVEELLQSS LSLGGQEQAPEHKQEQGVEHRQEPTQEHKQEEGQKQEEQEEEQ EEEGKQEEGQGTKEGREAVSQLQTDSEPKFHSESLSSNPSSFA PRVREVESTPMIMENIQELIRSAQEIDEMNEIYDENSYWRNQN PGSLLQLPHTEALLVLCYSIVENTCIITPTAKAWKYMEEEILG FGKSVCDSLGRRHMSTCALCDFCSLKLEQCHSEASLQRQQCDT SHKTPFVSPLLASQSLSIGNQVGSPESGRFYGLDLYGGLHM
694	1433	517	578	VSWVPSKDGDVEGARRPFTRLNTSLGPGLQEGRRRTWLVPIPG AVLPGRTQEQPRASPLY*PGAPPCQPQGLVAGPWAQ*AGLRSD GFGPWPW\RLVGTAGPREKKVQKSKCWHFRCGRHPARRSGWAG RHASLLATGRPCSSAPSQQPLGTAGDSRQELLRPPLV*VNGAQ SSAAGDWGSSPRTAQALARPHRLGHHPAAVAPAARLRTQSGHS PRGPLCRSPGSPRRMGTWRGPAGHSHD
695	1434	249	632	KTVAEEASVGNPEGAFMKMLQARKQHMSTELTIESEAPSDSSG INLSGFGSEQLDTNDESDVSSALSYILPYLSLRNLGAESILLP FTEQLFSNVQDGDRLLSILKNNRKSPSQSSLLGNKFKNKIF
696	1435	333	881	GECFIMAAVVQQNDLVFEFASNVMEDERQLGDPAIFPAVIVEH VPGADILNSYAGLACVEEPNDMITESSLDVAEEEIIDDDDDDI TLTVEASCHDGDETIETIEAAEALLNMDSPGPMLDEKRINNNI FSSPEDDMVVAPVTHVSVTLDGIPEVMETQQVQEKYADSPGAS SPEQPKRKKK

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697	1436	3	466	HEASGVSRALLQSAPGTPATVGISVGELWPFARCCSHSYVRSL RGLSVSTHLLCFTIYIMNPSMKQKQEEIKENIKTSSVPRRTLK MIQPSASGSLVGRENELSAGLSKRKHRNDHLTSTTSSPGVIVP ESSENKNLGGVTQESFDLMIKGMKK
698	1437	50	241	PLPARGKSTLPATFCSPSAPELASMSVVPPNRSQTGWPRGVTQ FGNKYIQQTKPLTLERTINL
699	1438	1	422	AEGEDVPPLPTSSGDGWEKDLEEALEAGGCDLETLRNIIQGRP LPADLRAKVWKIALNVAGKGDSLASWDGILDLPEQNTIHKDCL QFIDQLSVPEEKAAELLLDIESVITFYCKSRNIKYSTSLSWIH LLKPLVHLQLP
700	1439	161	413	ALPKFLTHGVKSNERVVVWLFPPSFRAATMVHMNVLPDALKSI NNAERRGKPQVLIRLCSKIIIWFLTVMVKYGYIGKFEPTRP
701	1440	211	977	AMAQYGHPSPLGMAAREELYSKVTPRRNRQQRPGTIKHGSALD VLLSMGFPRARAQKALASTGGRSVQAACDWLFSHVGDPFLDDP LPREYVLYLRPTGPLAQKLSDFWQQSKQICGKNKAHNIFPHIT LCQFFMCEDSKVDALGEALQTTVSRWKCKFSAPLPLELYTSSN FIGLFVKEDSAEVLKKFAADFAAEAASKTEVHVEPHKKQLHVT LAYHFQASHLPTLEKLAQNIDVKLGCDWVATIFSRDIRFA
702	1441	3	408	QTRPASPRTARESVLGVSQNMSFNLQSSKKLFIFLGKSLFSLL EAMIFALLPKPRKNVAGEIVLITGAGSGLGRLLALQFARLGSV LVLWDINKEGNEETCKMAREAGATRVHAYTCDCSQKEGVYRVA DQVKK
703	1442	708	244	MVARKGQKSPRFRRVTCFLRLGRSTLLELEPAGRPCSGRTRHR ALHRRLVACVTVSSRRHRKEAGRGRAESFIAVGMAAPSMKERQ VCWGARDEYWKCLDENLEDASQCKKLRSSFESSCPQQWIKYFD KRRDYLKFKEKFEAGQFEPSETTAKS
704	1443	3	475	PAPAARSRELLKELRNGQDMDTVVFEDVVVDFTLEEWALLNPA QRKLYRDVMLETFKHLASVDNEAQLKASGSISQQDTSGEKLSL KQKIEKFTRKNIWASLLGKNWEEHSVKDKHNTKERHLSRNPRV ERPCKSSKGNKRGRTFRKTRNCNRHLRR
705	1444	276	437	CVCGFFVCFETKSCFVAQAGVQWHNLSSLQALPPGFKQFSCLS LLSSWHYRRV
706	1445	2	322	GTRLRRRREAVWFEVVNMDFSRLHMYSPPQCVPENTGYTYALS SSYSSDALDFETEHKLDPVFDSPRMSRRSLRLATTACTLGDGE AVGADSGTSSAVSLKNRAAR
707	1446	123	410	DTMQAVVPLNKMTAISPEPQTLASTEQNEVPRVVTSGEQEAIL RGNAADAESFRQRFRWFCYSEVAGPRKALSQLWELCNQWLRPD IHTKE\QILE
708	1447	2	384	PICLFSRPTLRPSRSKVSLIEGRGANMAARWRFWCVSVTMVVA LLIVCDVPSASAQRKKEMVLSEKVSQLMEWTNKRPVIRMNGDK FRRLVKAPPRNYSVIVMFTALQLHRQCVVCKYELQLRFKIK

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709	1448	104	535	QMRVKDPTKALPEKAKRSKRPTVPHDEDSSDDIAVGLTCQHVS HAISVNHVKRAIAENLWSVCSECLKERRFYDGQLVLTSDIWLC LKCGFQGCGKNSESQHSLKHFKSSRTEPHCIIINLSTWIIWWY EWDEKIFTPLNKKG
710	1449	116	479	AKERGEERQGEGGGWLSGSRWPLVRSAFVPAPSSLILSMCLSP GIPEAAPDSPLTASAPTP*VMLLGDTGVGKTCFLIQFKDGAFL SGTFIATVGIDFRVRWLQALASSREPGLWLRHGGV
711	1450	2	232	FYPRSSADLPFQTTRCEFQTSVMELAHSLLLNEEALAQITEAK RPVFIFEWLRFLDKVLVAANKVWYCSFFPVALT
712	1451	105	393	MNMKQKSVYQQTKALLCKNFLKKWRMKRESLLEWGLSILLGLC IALFSSSMRNVQFPGMAPQNLGRVDKFNSSSLMVVYTPISNLT QQIMNKTAL
713	1452	2	525	SPQGNGCPDVTGDSVIRVPLTLLVHNLAGLTGLLHHCLSGPLP APSPPPAMSSSRKDHLGASSSEPLPVIIVGNGPSGICLSYLLS GYTPYTKPDAIHPHPLLQRKLTEAPGVSILDQDLDYLSEGLEG RSQSPVALLFDALLRPDTDFGGNMKSVLTWKHRKEHAIPHVVL GR
714	1453	2	1557	NRRTRAQRCQRGRSCGAREEEVEPGTARPPPAASAMDASLEKI ADPTLAEMGKNLKEAVKMLEDSQRRTEEENGKKLISGDIPGPL QGSGQDMVSILQLVQNLMHGDEDEEPQSPRIQNIGEQGHMALL GHSLGAYISTLDKEKLRKLTTRILSDTTLWLCRIFRYENGCAY FHEEEREGLAKICRLAIHSRYEDFVVDGFNVLYNKKPVIYLSA AARPGLGQYLCNQLGLPFPCLCRVPCNTVFGSQHQMDVAFLEK LIKDDIERGRLPLLLVANAGTAAVGHTDKIGRLKELCEQYGIW LHVEGVNLATLALGYVSSSVLAAAKCDSMTMTPGPWLGLPAVP AVTLYKHDDPALTLVAGLTSNKPTDKLRALPLWLSLQYLGLDG FVERIKHACQLSQRLQESLKKVNYIKILVEDELSSPVVVFRFF QELPGSDPVFKAVPVPNMTPSGVGRERHSCDALNRWLGEQLKQ LVPASGLTVMDLEAEGTCLRFSPLMTAAGKPGLVDIPCFCSGA AG
715	1454	319	873	LCIMDTKEEKKERKQSYFARLKKKKQAKQNAETASAVATRTHT GKEDNNTVVLEPDKCNIAVEEEYMTDEKKKRKSNQLKEIRRTE LKRYYSIDDNQNKTHDKKEKKMVVQKPHGTMEYTAGNQDTLNS IALKFNITPNKLVELNKLFTHTIVPGQVLFVPDANSPSSTLRL SSSSPGATVSPSS
716	1455	60	681	SAGGDSCRAVPMLRFPTCFPSFRVVGEKQLPQEIIPLVWSPKR DLIALANTAGEVLLHRLASFHRVWSFPPNENTGKEVTCLAWRP DGKLLAFALADTKKIVLCDVEKPESLHSFSVEAPVSCMHWMEV TVESSVLTSFYNAEDESNLLLPKLPTLPKNYSNTSKIFSEENS DEIIKLLGDVRLNILVLGGSSGFIELYAYGMFKI
717	1456	357	658	PRDPVTDRARAMPRRGLVAGPDLEYFQRHYFTPAEVAQHNRPE DLWVSYLGRVYDLTSLAQEYKGNLLLKPIVEVAGQDISHWFDP KTRDVSYAGTWDCG

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718	1457	2	481	RIPGRRFRAAFVLGSANVASSVRLRCSFPLSLGGPSGPAAASV ALGPAGPGRSLGRTPDTGDWEMDSVSFEDVAVAFTQEEWALLD PSQKNLYRDVMQEIFRNLASVGNKSEDQNIQDDFKNPGRNLSS HVVERLFEIKEGSQYGETFSQDSNLNLNKI
719	1458	6	469	SLSLSVSPFLRLSLGRVGGMAEEMESSLEASFSSSGAVSGASG FLPPARSRIFKIIVIGDSNVGKTCLTYRFCAGRFPDRTEATIG VDFRERAVEIDGERIKIQLWDTAGQERFRKSMVQHYYRNVHAV VFVYDMTNMASFHSLPSWIEECKQH
720	1459	82	490	RRPSPGSIVIMAAESDVLHFQFEQQGDVVLQKMNLLRQQNLFC DVSIYINDTEFQGHKVILAACSTFMRDQFLLTQSKHVRITILQ SAEVGRKLLLSCYTGALEVKRKELLKYLTAASYLQMVHIAEKR TEAFVKF
721	1460	48	708	AEGLQSAAGIRIDTKAGPPEMLKPLWKAAVAPTWPCSMPPRRP WDRQAGTLQVLGALAVLWLGSVALICLLWQVPRPPTWGQVQPK DVPRSWEHGSSPAWEPLEAEARQQRDSCQLVLVESIPQDLPSA AGSPSAQPLGQAWLQLLDTAQESVHVASYYWSLTGPDIGVNDS SSQLGEALLQKLQQLLGRNISLAVATSSPTLARTSTDLQVLAA RGAH
722	1461	436	677	RKKKMPLPFGLKLKRTRRYTVSSKSCLVARIQLLNNEFVEFTL SVESTGQESLEAVAQRLELREVTYFSLWYYNKQNQRR
723	1462	45	569	LQPLSSWESASEVTRSPVSPEDVKQATSNFENLQKQLARKMKL PIFIADAFTARAFRGNPAAVCLLENELDEDMHQKIAREMNLSE TAFIRKLHPTDNFAQSSCFGLRWFTPASEVPLCGHATLASAAV LFHKIKNMNSTLTFVTLSGELRARRAEDGIVLDLPLYPAHPQD FHE*
724	1463	79	530	AADTMQSDDVIWDTLGNKQFCSFKIRTKTQSFCRNEYSLTGLC NRSSCPLANSQYATIKEEKGQCYLYMKVIERAAFPRRLWERVR LSKNYEKALEQIDENLIYWPRFIRHKCKQRFTKITQYLIRIRK LTLKRQRKLVPLSKKVERREK
725	1464	2	261	FVERGLGDPALPTLMFEEPEWAEAAPVAAGLGPVISRPPPAAS SQNKVSDSREQWELFQAAKRTLVDPSAVCIAGRDTCGTVKGES
726	1465	1	860	VVEFLWSRRPSGSSDPRPRRPASKCQMMEERANLMHMMKLSIK VLLQSALSLGRSLDADHAPLQQFFVVMEHCLKHGLKVKKSFIG QNKSFFGPLELVEKLCPEASDIATSVRNLPELKTAVGRGRAWL YLALMQKKLADYLKVLIDNKHLLSEFYEPEALMMEEEGMVIVG LLVGLNVLDANL\CLKGEDLDSQVGVIDFSLYLKDVQDLDGGK EHERITDVLDQKNYVEELNRHLSCTVGDLQTKIDGLEKTNSKL QERVSAATDRICSLQEEQQQLREQNELIR
727	1466	69	452	GCYAPSPHLGGSLTPRFFPNGVFHRRLPRPRPPQPPSVSSAPT LRPLCAHFSLGKLRLRVRKSAEVAPPRTEKGWGSAEPRHSRAP LGLQGLRMAASAQVSVTFEDVAVTFTQEEWGQLDAAQRTLY

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
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729	1468	103	236	LNFANSAAFAVTMPQNEYIELHRKRYGFRLDYHEKKRKKQSRE A
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731	1470	264	799	WESDVGEGLRPPPPPPPPPGRRRTQEPRARDAATVIFACPAALL ETLIAYGSSSPSFCKHRAARPLIFLLHRLTAEATARCPICALE ARNPGRWGICASWPGMKTPFGKAAAGQRSRTGAGHGSVSVTMI KRKAAHKKHRSRPTSQPRGNIVGCIIQHGWKDGDEPLTQWKGT VLDQLL
732	1471	2	763	RDLGVALEAFQWARAGDCGSGAGRAGGEGVDAGRRVPERQHRG RGGGGEPGRRQRGGRRQ\RSSSRRSGGDGGDEVEGSGVGAGEG ETVQHFPLARPKSLMQKLQCSFQTSWLKDFPWLRYSKDTGLMS CGWCQKTPADGGSVDLPPVGHDELSRGTRNYKKTLLLRHHVST EHKLHEANAQESEIPSEEGYCDFNSRPNENSYCYQLLRQLNEQ RKKGILCDVSIVVSGKIFKAHKNILVAGSRFFKTLYCFS
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SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corre- sponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corre- sponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
738	1477	2	421	WGRRRQLVSEAARAQGDPVCSTMSEEEAAQIPRSSVWEQDQQN VVQRVVALPLVRATCTAVCDVYSAAKDRHPLLGSACRLAENCV CGLTTRALDHAQPLLEHLQPQLATMNSLACRGLDKLEEKLPFL QQPSETVVTS
739	1478	256	1250	AKAFTMAESPGCCSVWARCLHCLYSCHWRKCPRERMQTSKCDC IWFGLLFLTFLLSLSWLYIGLVLLNDLHNFNEFLFRRWGHWMD WSLAFLLVISLLGTYASLLLVLALLLRLCRQPLHLHSLHKVLL LLIMLLVAAGLVGLDIQWQQERHSLRVSL/QDCR*L*TPAVRP *EESGEGHWRRAHLTSSCPQATAPFLHIGAAAGIALLAWPVAD TFYRIHRREPKILLLLLFFGVVLVIYLAPLCISSPCIMEPRDL PPKPGLVGHRGAPMLAPENTLMSLRKTAECGATVFETDVMVSS DGVPFLMHDEHLSRTTNVASVFPTRITAHSS

WHAT IS CLAIMED IS:

1.   An isolated polynucleotide comprising a nucleotide sequence selected from the group consisting of SEQ ID NO: 1-739, a mature protein coding portion of SEQ ID NO:1-739, an active domain of SEQ ID NO: 1-739, and complementary sequences thereof.

2.   An isolated polynucleotide encoding a polypeptide with biological activity, wherein said polynucleotide hybridizes to the polynucleotide of claim 1 under stringent hybridization conditions.

3.   An isolated polynucleotide encoding a polypeptide with biological activity, wherein said polynucleotide has greater than about 90% sequence identity with the polynucleotide of claim 1.

4.   The polynucleotide of claim 1 wherein said polynucleotide is DNA.

5.   An isolated polynucleotide of claim 1 wherein said polynucleotide comprises the complementary sequences.

6.   A vector comprising the polynucleotide of claim 1.

7.   An expression vector comprising the polynucleotide of claim 1.

8.   A host cell genetically engineered to comprise the polynucleotide of claim 1.

9.   A host cell genetically engineered to comprise the polynucleotide of claim 1 operatively associated with a regulatory sequence that modulates expression of the polynucleotide in the host cell.

10.   An isolated polypeptide, wherein the polypeptide is selected from the group consisting of:

(a)   a polypeptide encoded by any one of the polynucleotides of claim 1; and

(b)   a polypeptide encoded by a polynucleotide hybridizing under stringent conditions with any one of SEQ ID NO:1-739.

11.   A composition comprising the polypeptide of claim 10 and a carrier.

12.   An antibody directed against the polypeptide of claim 10.

13.   A method for detecting the polynucleotide of claim 1 in a sample, comprising:

        a)   contacting the sample with a compound that binds to and forms a complex with the polynucleotide of claim 1 for a period sufficient to form the complex; and

        b)   detecting the complex, so that if a complex is detected, the polynucleotide of claim 1 is detected.

14.   A method for detecting the polynucleotide of claim 1 in a sample, comprising:

        a)   contacting the sample under stringent hybridization conditions with nucleic acid primers that anneal to the polynucleotide of claim 1 under such conditions;

        b)   amplifying a product comprising at least a portion of the polynucleotide of claim 1; and

        c)   detecting said product and thereby the polynucleotide of claim 1 in the sample.

15.   The method of claim 14, wherein the polynucleotide is an RNA molecule and the method further comprises reverse transcribing an annealed RNA molecule into a cDNA polynucleotide.

16.   A method for detecting the polypeptide of claim 10 in a sample, comprising:

a)   contacting the sample with a compound that binds to and forms a complex with the polypeptide under conditions and for a period sufficient to form the complex; and

b)   detecting formation of the complex, so that if a complex formation is detected, the polypeptide of claim 10 is detected.

17.   A method for identifying a compound that binds to the polypeptide of claim 10, comprising:

a)   contacting the compound with the polypeptide of claim 10 under conditions sufficient to form a polypeptide/compound complex; and

b)   detecting the complex, so that if the polypeptide/compound complex is detected, a compound that binds to the polypeptide of claim 10 is identified.

18.   A method for identifying a compound that binds to the polypeptide of claim 10, comprising:

a)   contacting the compound with the polypeptide of claim 10, in a cell, under conditions sufficient to form a polypeptide/compound complex, wherein the complex drives expression of a reporter gene sequence in the cell; and

b)   detecting the complex by detecting reporter gene sequence expression, so that if the polypeptide/compound complex is detected, a compound that binds to the polypeptide of claim 10 is identified.

19.   A method of producing the polypeptide of claim 10, comprising,

a)   culturing a host cell comprising a polynucleotide sequence selected from the group consisting of a polynucleotide sequence of SEQ ID NO: 1-739, a mature protein coding portion of SEQ ID NO: 1-739, an active domain of SEQ ID NO: 1-739, complementary sequences thereof and a polynucleotide sequence hybridizing under stringent conditions to SEQ ID NO: 1-739, under conditions sufficient to express the polypeptide in said cell; and

b)   isolating the polypeptide from the cell culture or cells of step (a).

20. An isolated polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NO: 740-1478, the mature protein portion thereof, or the active domain thereof.

21. The polypeptide of claim 20 wherein the polypeptide is provided on a polypeptide array.

22. A collection of polynucleotides, wherein the collection comprises the sequence information of at least one of SEQ ID NO: 1-739.

23. The collection of claim 22, wherein the collection is provided on a nucleic acid array.

24. The collection of claim 23, wherein the array detects full-matches to any one of the polynucleotides in the collection.

25. The collection of claim 23, wherein the array detects mismatches to any one of the polynucleotides in the collection.

26. The collection of claim 22, wherein the collection is provided in a computer-readable format.

27. A method of treatment comprising administering to a mammalian subject in need thereof a therapeutic amount of a composition comprising a polypeptide of claim 10 or 20 and a pharmaceutically acceptable carrier.

28. A method of treatment comprising administering to a mammalian subject in need thereof a therapeutic amount of a composition comprising an antibody that specifically binds to a polypeptide of claim 10 or 20 and a pharmaceutically acceptable carrier.

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aaggcttaca ggtgatgaga aagattctgt ttcgaatata gccagagaaa taaggatgg          480
agaaaaatct gggacagtgt ctcctcagaa acaatcggcc cagaaggtta tatttaaaaa         540
gaaagtttct cttttgaata ttgccacaag aataacgggc ggttggaaat ctggaacaga         600
gtatcctgag aatctgccca ccttgaaggc tacaattgaa aataaaaatt ctgttctgaa         660
tacagccacc aaaatgaaag atgtacaaac atccacacca gaacaagact tagaaatggc         720
atcagaggga gagcaaaaga ggcttgaaga atatgaaaat aaccagccac aggtgaaaaa         780
ccaaatacat tctagggatg accttgatga cataattcag tcatctcaaa cagtctcaga         840
ggacggtgac tcgctttgct gtaattgtaa gaatgtcata ttactcattg atcaacatga         900
aatgaagtgt aaagattgtg ttcacctatt gaaaattaaa aagacatttt gtttatgtaa         960
aagattaaca gaacttaaag ataatcactg tgagcaactt agagtaaaaa ttcgaaaact        1020
gaaaaataag gctagtgtac tacaaaagag actatctgaa aaagaagaaa taaaatcgca        1080
gttaaagcat gaaacacttg aattggaaaa agaactctgt agtttgagat ttgccataca        1140
gcaag                                                                    1145
```

```
      <210> 11
      <211> 890
      <212> DNA
      <213> Homo sapiens
```

5

<400> 11
```
gtagtccgct gcggtaccgg gccggacaat ctgggtcgac gatttcgagc tcgtcatgcg      60
caatgtggcg ctgcggcggg cggcagggcc tgtgtgtgct gaggcggctg agcggcggac     120
atgcacacca cagagcgtgg cgatggaaca gtaaccgggc ttgtgagagg gctctgcagt     180
ataaactagg agacaagatc catggattca ccgtaaacca ggtgacatct gttcccgagc     240
tgttcctgac tgcagtgaag ctcacccatg atgacacagg agccaggtat ttacacctgg     300
ccagagaaga cacgaataat ctgttcagcg tgcagttccg taccactccc atggacagta     360
ctggtgttcc tcacattctt gagcataccg tcctttgtgg gtctcagaaa tatccgtgca     420
gagacccttt cttcaaaatg ttgaaccggt ccctctccac gttcatgaac gccttcacag     480
ctagtgatta tactctgtat ccattttcca cacaaaatcc caaggacttt cagaatctcc     540
tctcggtgta tttggatgcc accttttttcc catgtttacg cgagctggat ttctggcagg     600
aaggatggcg gctggaacat gagaatccga gcgaccccca gacgcccttg gtctttaaag     660
gagtcgtctt taatgagatg aagggagcgt ttacagacaa tgagaggata ttctcccagc     720
accttcagaa cagacttctt cctgaccaca cgtactcagt ggtctccggg ggtgacccac     780
tgtgcatccc ggagcttaca tgggagcagc ttaagcagtt tcatgccact cactatcacc     840
caagcaatgc taggttcttc acgtacggta attttccctt agaccagcat               890
```


<210> 12
<211> 982
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(982)
<223> n = a,t,c or g

<400> 12
```
tttcgtcaca cacgcacacg caccctgcca ctgcagccgc catggatatc agctaacaac      60
acacacccag gcgcgcgcgc gcgttcccac tcgcaccacg caggagtggc ccccggcatc     120
cctaccctcc ttccccaccc ccaccacacc cgctcaccag ctcggctact gctcgctccg     180
gctgccgccg ccgccgccgc cgacgccacc accactgctt cctctgctgc ggggccacag     240
ccttgagtgt cattcaaggg acagcacaac ctcatccaag ctctcctacc tctgcccagc     300
cgtgcctctc atcctcccca ttcctcgtcc acactccatc caaagaagag ggaaagcacc     360
gaatagaggg gggcgaaggc aaagtctgct gttcttcccc ctgggccccc ttgctcctcc     420
atcctcattc tctcaccacc agcccccta accccaagga gcccaggaac tgaggcgact     480
cgccccactg ccatgtccaa aagcttgaaa aagaaaagcc actggactag caaagtccat     540
gagagtgtca ttggcaggaa cccggagggc cagctgggct ttgaactgaa ggggggcgcc     600
gagaatggac agttccccta cctggggggag gtgaagcccg gcaaggtggc ctatgagagc     660
ggcagcaaat tggtgtcgga ggagctgctg ctggaggtga acgagacccc cgtggcgggg     720
ctcaccatca gggacgtgct ggccgtgatc aaacactgca aggacccct ccggctcaag     780
tgtgtcaagc aaggtgagag cagcggcttg ctcagtgttt tgccgggcgg tgggaccgct     840
cggggcgcag ggcaatgaaa gggtggccgc gcatgttgaa gggggtgtgt tgcgcgatga     900
tggggtgggg gccagagagc acccgcagtg caagtgagtt cgccggggga ttcgacgaaa     960
tcgtnncccg ggaattccgg ac                                             982
```


<210> 13
<211> 440
<212> DNA
<213> Homo sapiens
```
```

```
<400> 13
ccgtgccgga attcccgcgt cgacgatttc gtggctaagg cgccaggcac gggcaccacc      60
agggcgccca ggagccgccc gccgccggca tggaccagct gtactgccca ccgagcgcgt     120
gccagtcttt tggtaagaac tagtcacaca gacctcaacc tgatgcgtgg agacaaggaa     180
atgcttttca gtgtgtccag aaagagaaaa tgcaggtgtc ttctgcggag gtgcgcatcg     240
ggcccatgag actgacgcag gaccctattc aggttttgct gatctttgca aaggaagata     300
gtcagagcga tggcttctgg tgggcctgcg acagagctgg ttatagatgc aatattgctc     360
ggactccaga gtcagccctt gaatgctttc ttgataagca tcatgaaatt attgtaattg     420
atcatagaca aactcagaac                                                 440
```

```
<210> 14
<211> 581
<212> DNA
<213> Homo sapiens
```

```
<400> 14
tttcgtttgg ccggctgcgg gcacctcctg gtctcgctgc tggggctgct gctgctgctg      60
gcgcgctccg gcacccgggc gctggtctgc ctgccctgtg acgagtccaa gtgcgaggag     120
cccaggaact gccgggggag catcgtgcag ggcgtctgcg gctgctgcta cacgtgcgcc     180
agccagagga acgagagctg cggcggcacc ttcgggattt acggaacctg cgaccggggg     240
ctgcgttgtg tcatccgccc ccgctcaat ggcgactccc tcaccgagta cgaagcgggc      300
gtttgcgaag atgagaactg gactgatgac caactgcttg gttttaaacc atgcaatgaa     360
aaccttattg ctggctgcaa tataatcaat gggaaatgtg aatgtaacac cattcgaacc     420
tgcagcaatc cctttgagtt tccaagtcag gatatgtgcc tttcagcttt aaagagaatt     480
gaagaagaga agccagattg ctccaaggcc cgctgtgaag tccagttctc tccacgttgt     540
cctgaagatt ctgttctgat cgagggttat gctcctcctg g                        581
```

```
<210> 15
<211> 693
<212> DNA
<213> Homo sapiens
```

```
<400> 15
tttcgtatgg cggccaatgt gggatcgatg tttcaatatt ggaagcgctt tgatttacag      60
cagctgcaga gagaactcga tgccaccgca acggtattgg cgaaccggca ggatgaaagt     120
gagcagtcca gaaagcggct tatcgaacag agccgggagt tcaagaagaa cactccagag     180
gtgaggcgcg tgaccatcgt gttcgctttg aagggatctt agaatgctgg tgcatgttca     240
ggcgacgctc cgtgagcgtt tcattttcat cagatgaacg cacggccggc aaacaacccg     300
tttctttccc cagatgtctt cagccccatt tccagcagaa cgcatgccat cctgcaggct     360
gtggggatgt ggaaattgat aggttgtctg aaatatgaa agtcagagcc aattccaggt     420
gcagatactg gacaagcttg gtctgtaaga acacgtgggc aggtgtgtgg gtgtctcaaa     480
ccctcgagct catcccagac cctgtcccat gtcagttagc aagccaccaa agtccataag     540
ggatcctgtg gggtggaagg tccgcggggc ctgcttccct gttgctggtg caggcggagt     600
gtctgaaggc tgcacgcatc tgggcatagc agtgcgccta acgcttcttg taaaacagac     660
```

7

```
atttcgcctg ctaagccttt taaatgcctc tct                                   693
```

```
        <210> 16
        <211> 562
        <212> DNA
        <213> Homo sapiens




        <400> 16
tttcgtggaa agagagaaac caccgctgcg ggtgggtaga gaagcacttg gcgcctcggg     60
gaggggaccg cgcccgcctc atttgcgcct tgcagcactg ctggaccagg ttacaagatg    120
ttcacctaag attgagacct agtgactaca tttcctacgg gaacaaataa atggtttttc    180
atctcccgga gatacattac aaacaaatat ggtgctaaaa gaactcctta cctttctctg    240
actacaattt atttggacat acttttgtat tgaagagagg tatacatact gaagctactt    300
gctgtactat aggagactct gtcctgtagg atcatggacc atcctagtag ggaaaaggat    360
gaaagacaac ggacaactaa acccatggca caaggagtg cacactgctc tcgaccatct    420
ggctcctcat cgtcctctgg ggttcttatg gtgggaccca acttcagggt tggcaagaag    480
ataggatgtg ggaacttcgg agagctcaga ttaggtgaag gtctcccaca ggtgtattac    540
tttggaccat gtgggaaata ta                                             562




        <210> 17
        <211> 899
        <212> DNA
        <213> Homo sapiens




        <400> 17
tttcgtgcgt ccccggccca accatggcgt cctccgcggc cggctgcgtg gtgatcgttg     60
gcaggaagtc tgaaacagca gttggagtgt agtggttaag aggaaggact caggagtcag    120
attgcttggc ttcatctcat agatccataa ccttatcaccc ttgtggactt aattcctcca    180
tgcctcagtt tatcacttat gtaggcttaa ttcctccatg cctcagtttc cctacatata    240
aaatggaaat actaataaca cttatcttgt agggttgttg taaagattaa catagtggag    300
tcattgggcg aagctgggcc atgctgtttg ccagtggagg cttccaggtg aaactctatg    360
acattgagca acagcagata aggaatgccc tggaaaacat caggtgggcc agccggcgct    420
ctccagaagg aatggaagtg ggtctgtttc tctcagttgg tcttgtttgt catatcctca    480
aggctatgag gatctgtgat gtcacatttt cgtctgatgg ctactgcagt gcctctgagt    540
tggtaaaggc caggcctaca gtggctggaa tgtgaattca cactggggaa gggctcccat    600
gggggaggaa acgacccttc ttgctaagag gatctgcatc aagcgtgagt gactttgcag    660
gcttctccag ctgtttgccc cggggctgga gggctggggt ttcctgcttc catctaggca    720
ggaggaactc gcttccagca tgtgacagcc atagctgcag gggcattaca gtttaagaac    780
agaggtcctg cagcttgttt tgacctgttg atctagtaat ggtaggaccc aaatgaaaac    840
atcttgaatt ttagttagag gtttagcact catgtgagag gacagaactg gagctgttt    899




        <210> 18
        <211> 519
        <212> DNA
```

<213> Homo sapiens

<400> 18
```
ggaattcccg ggtcgacgat ttcgtctccg cccgcccgaa gccgcgccca ctgcccagag      60
ccagagggat ggtggtagtc acggggcggg agccagacag ccgtcgtcag gacggtgcca     120
tgtccagctc tgacgccgaa gacgactttc tggagccggc cacgccgacg gccacgcagg     180
cggggcacgc gctgcccctg ctgccacagg agtttcctga ggttgttccc cttaacatcg     240
gaggggctca cttcactaca cgcctgtcca cactgcggtg ctacgaagac accatgttgg     300
cagccatgtt cagtgggcgg cactacatcc ccacggactc cgagggccgg tacttcatcg     360
accgagatgg cacacacttt ggagatgtgc tgaatttcct gcgctcaggg gacctcccac     420
ccaggagcg tgttcgagct gtgtacaaag aggcccagta ctatgccatc gggcccctcc     480
tggagcagct ggagaacatg ccgccactga aaggcgaga                           519
```


<210> 19
<211> 460
<212> DNA
<213> Homo sapiens

<400> 19
```
tttcgtgcag gggccaggcc tctctaggct ctccggctga gccgggttgg ggcccgggtt      60
gggccgcccg gggactctgg agcattggga tttgtagcgc gccctctggg taggcggctg     120
tagcggagag gcgtgcggga tcgggatgtc ggggctgctc acggacccgg agcagagagc     180
gcaggagccg cggtaccccg gcttcgtgct ggggctggat gtgggcagtt ctgtgatccg     240
ctgccacgtc tatgaccggg cggcgcgggt ctgcggctcc agcgtgcaga aggtagaaaa     300
tctttatcct caaattggct gggtagaaat tgatcctgat gttctttgga ttcaatttgt     360
tgccgtaata aaagaagcag tcaaagctgc aggaatacag atgaatcaaa ttgttggtct     420
tggcatttca acacagagag caacttttat tacgtggaac                          460
```


<210> 20
<211> 731
<212> DNA
<213> Homo sapiens

<400> 20
```
gagatcaagg agggctcaga agaggcgatg tctgatctgt cctccaggca gcaaaggaaa      60
gggaggtgtg ttcctggcag aaggcacagc ttgtactgag gcctggcagc agaacagagt     120
atgcaatttg tgaagctgtg gtgtggctgc agtggagagt tcccaacaag gctacgcaga     180
agaacccct tgactgaagc aatggagggg ggtccagctg tctgctgcca ggatcctcgg     240
gcagagctgg tagaacgggt ggcagccatc gatgtgactc acttggagga ggcagatggt     300
gggcccagagc ctactagaaa cggtgtggac ccccaccac gggccagagc tgcctctgtg     360
atccctggca gtacttcaag actgctccca gcccggccta gcctctcagc caggaagctt     420
tccctacagg agcggccagc aggaagctat ctggaggcgc aggctgggcc ttatgccacg     480
gggcctgcca gccacatctc ccccgggcc tggcggaggc ccaccatcga gtcccaccac     540
gtggccatct cagatgcaga ggactgcgtg cagctgaacc agtacaagct gcagagtgag     600
```

```
attggcaagg gtgcctacgg tgtggtgagg ctggcctaca acgaaagtga agacagacac    660
tatgcaatga aagtcctttc caaaaagaag ttactgaagc agtatggctt ccacgtcgc     720
cctcccccga a                                                         731
```

```
<210> 21
<211> 519
<212> DNA
<213> Homo sapiens
```

```
<400> 21
tttcgtttat gggaagccag taacactgtg gcctactatc tcttccgtgg tgccatctac    60
atttttggga ctcgggaatt atgaggtaga ggtggaggcg gagccggatg tcagaggtcc   120
tgaaatagtc accatggggg aaaatgatcc gcctgctgtt gaagcccct tctcattccg     180
atcgcttttt ggccttgatg atttgaaaat aagtcctgtt gcaccagatg cagatgctgt    240
tgctgcacag atcctgtcac tgctgccatt gaagtttttt ccaatcatcg tcattgggat    300
cattgcattg atattagcac tggccattgg tctgggcatc cacttcgact gctcagggaa    360
gtacagatgt cgctcatcct ttaagtgtat cgagctgata gctcgatgtg acggagtctc    420
ggattgcaaa gacggggagg acgagtaccg ctgtgtccgg gtgggtggtc agaatgccgc    480
gctccaggtg ttcacagctg cttcgcggaa gaccatgtg                          519
```

```
<210> 22
<211> 544
<212> DNA
<213> Homo sapiens
```

```
<400> 22
tttcgtgctg gaggttcgct agccgaagcg gctgcatctg gcgccgcgtc tgccccgcgt    60
gctcggagcg gattctgccc gccgtccccg gagccctcgg cgccccgctg agccgcgat    120
cacttcctcc ctgtgaccaa ccggcgctgc aggttagagc ctggcaatgc cgtttgggtg   180
tgtgactctg ggcgacaaga agaactataa ccagccatcg gaggtgactg acagatatga    240
tttgggacag gtcatcaaga ctgaggagtt ttgtgaaatc ttccgggcca aggacaagac    300
gacaggcaag ctgcacacct gcaagaagtt ccagaagcgg gacggccgca aggtgcggaa    360
agctgccaag aacgagatag gcatcctcaa gatggtgaag catcccaaca tcctacagct    420
ggtggatgtg tttgtgaccc gcaaggagta ctttatcttc ctggagctgt gagtgtgggt    480
ctggggaccc aaaattcccc agcgcccagg gctttcacct gtcccaccct ctgcagctaa    540
ggag                                                                544
```

```
<210> 23
<211> 749
<212> DNA
<213> Homo sapiens
```

```
        <400> 23
caacgtcgac gatttcgtgc ggggctgtgg ggagggcacg gactgacaga cggactccgg    60
cggaatgggg ggtgtggctg ctccgccagg gtccccaggg tgggagagcg gctccgcggc   120
caccgatgcc cggacccect ctgtcttctg ctagacatgc tcttcctctc gtttcatgca   180
ggctcttggg aaagctggtg ctgctgctgc ctgattcccg ccgacagacc ttgggaccgg   240
ggccaacact ggcagctgga gatggcggac acgagatccg tgcacgagac taggtttgag   300
gcggccgtga aggtgatcca gagtttgccg aagaatggtt cattccagcc aacaaatgaa   360
atgatgctta aattttatag cttctataag caggcaactg aaggaccctg taaactttca   420
aggcctggat tttgggatcc tattggaaga tataaatggg atgcttggag ttcactgggt   480
gatatgacca aagaggaagc catgattgca tatgttgaag aaatgaaaaa gattattgaa   540
actatgccaa tgactgagaa agttgaagaa ttgctgcgtg tcataggtcc attttatgaa   600
attgtcgagg acaaaaagag tggcaggagt tctgatataa cctcagatct tggtaatgtt   660
ctcacttcta ctccaaacgc caaaaccgtt aatggtaaag ctgaaagcag tgacagtgga   720
gccgagtctg aggaagaaga ggcgtgtgt                                      749
```

```
        <210> 24
        <211> 556
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 24
tttcgtgctt taaggggcgg acgggcggga ggtcggggtc ctccggggat tcgagccggt    60
gggctcgttg tgggcgccat ttctcggcgt ctaccgagga gccgcccctt tctcagcctt   120
gctcggctct tccccgctct ggtcgccggg gctgcgccgt ccccagctca gtgacaaaaa   180
tgctgagttt cttccgtaga acactagggc gtcggtctat gcgtaaacat gcagagaagg   240
aacgactccg agaagcacaa cgcgccgcca cacatattcc tgcagctgga gattctaagt   300
ccatcatcac gtgtcgggtg tcccttctgg atggtactga tgttagtgtg gacttgccaa   360
aaaaagccaa aggacaagag ttgtttgatc agattatgta ccacctggac ctgattgaaa   420
gcgactattt tggtctgaga tttatggatt cagcacaagt agcacattgg ttggatggta   480
caaaaagcat caaaaagcaa gtaaaaattg gttcaccta ttgtctgcat cttcgagtta   540
agttttattc ctcaga                                                   556
```

```
        <210> 25
        <211> 422
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 25
gtcggtgaga atccagggag aggagcggaa acagaagagg ggcagaagac cggggcactt    60
gtgggttgca gagcccctca gccatgttgg gagccaagcc acactggcta ccaggtcccc   120
tacacagtcc cgggctgccc ttggttctgg tgcttctggc cctgggggcc gggtgggccc   180
aggaggggtc agagcccgtc ctgctggagg gggagtgcct ggtggtctgt gagcctggcc   240
gagctgctgc aggggggccc gggggagcag ccctgggaga ggcaccccct gggcgagtgg   300
catttgctgc ggtccgaagc caccaccatg agccagcagg gaaaccggc aatggcacca   360
gtggggccat ctacttcgac caggtcctgg tgaacgaggg cggtggcttt gaccgggcct   420
ct                                                                  422
```

```
        <210> 26
        <211> 506
        <212> DNA
        <213> Homo sapiens



        <400> 26
agaagatgtg  aagtcgtatt  atacagtaca  tctaccacaa  ttagaaaata  tcaatagtgg      60
tgaaaccaga  acaatatctc  actttcatta  tactacttgg  ccagattttg  gagtccctca     120
atcaccagct  tcatttctca  atttcttgtt  taaagtgaga  gaatctggct  ccttgaaccc     180
tgaccatgga  cctgtggtga  tccaccgtag  tgcaggcact  ggacgctcca  gcaccttctc     240
tgtggtacac  acttgtcttg  ttttgatgga  aaaaggagat  gatattaaca  ttaaacaagt     300
gttactgaac  ataagaaaat  tccaaatggg  tcttatctca  gaccccagat  caactgagat     360
tctcatacat  ggctataaca  gaaggagcaa  aatgtgtaaa  gggagattct  agtatacaga     420
aacgatggaa  agaactttct  aaggaagact  ccctcctgct  tttgatcatt  caccaaacaa     480
aataatgact  gaaaaataca  atagga                                            506




        <210> 27
        <211> 850
        <212> DNA
        <213> Homo sapiens



        <400> 27
caggcctttg  tgtaaggcca  gaggaggatc  acgggtgcca  taaaccttca  cggggccaag      60
ggctggtgtc  ccggggctgg  tgacttaaca  ggcagagatg  tggagaccag  gtgcttgtgc     120
ccgggacggg  cctggctgcc  atcctgagga  cactgcccat  gttccatgac  gaggagcacg     180
cccgagcccg  cggcctctct  gaggacaccc  tggtgctacc  cccggccagc  cgcaaccaga     240
ggattctcta  caccgtgctg  gagtgccagc  ccctcttcga  ctccagtgac  atgaccatcg     300
ctgagtgggt  ttgccttgcc  cagaccatca  agaggcacta  cgagcagtac  cacggctttg     360
tggtcatcca  cggcaccgac  accatggcct  ttgctgcctc  gatgctgtcc  ttcatgctgg     420
agaacctgca  gaagactgtc  atcctcactg  gggcccaggt  gcccatccat  gccctgtgga     480
gcgacggccg  tgagaacctg  ctgggggcac  tgctcatggc  tggccagtat  gtgatcccag     540
aggtctgcct  tttcttccag  aatcagctgt  ttcggggcaa  ccgggcaacc  aaggtagacg     600
ctcggaggtt  cgcagctttc  tgctccccga  acctgctgcc  tctggccaca  gtgggtgctg     660
acatcacaat  caacagggag  ctggtgcgga  aggtggacgg  gaaggctggg  ctggtggtgc     720
acagcagcat  ggagcaggac  gtgggcctgc  tgcgcctcta  ccctgggatc  cctgccgccc     780
tggttcgggc  cttcttgcag  cctcccctga  agggcgtggt  catggagacc  ttcggttcag     840
ggaacggacc                                                               850




        <210> 28
        <211> 990
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 28
tttttttttt ttacttgtaa tacgtatttt aattttttgtt tcatatgagt ttaagtgttg        60
tctaggtgac atcaaaatct aaggcaaaca gacttgacca tcttcagacc cactgcattc       120
tcaagctgaa gtggtctgct catagtttgt gtgccaggtt gctcatcagt attgatactg       180
tcccagaaca ggttgtaggt ataattcaga gactgtcctt tgcaaaggaa atgaccagca       240
tttcaactgt atgtcttcct ggaagggtag attctgctat atcttctttg tctgcatcaa       300
aagactcaag aggaatgtgg acacatttca tatcccattt gtagagtaaa gcttcaagtg       360
accagtcagc actcctaact tgataagtag accacaattg gaccttggga ttcttgtgca       420
tcaaaaaata tattgtagcc aaaatgtctt caaaatcttc tggttcaaag aacacatcag       480
atgcaaggat aatatcttgt ggtggtagag ccagaagatc ccaagatata tgaccccatg       540
ttagtcctac cacctgcaga tgtggcaggt tattcatttg gcagctttgc cgacagactt       600
ccagacagtg aggcagttct gagctgtctg acagtattac ttctgcacca catttggcag       660
ccaaaattcc tggaaggctc actccagctc caatctgcgg gacgtggacc tccaggacag       720
ccccgtcggc ccccggaccc ggctcctccg agaatcgaaa gcgctgggcc cggacccct        780
gtcctcggaa atcgtgctcg cccagtaggg cgtcgttggg ccccgggcgg gcggggggacc      840
gcggaaggct ccgggctgcc agactgcgcg agcgggaagc cgcgggccac gtggccgtag       900
cacctgacgg caagaagggg aaagcccaga tctggtgata accctgccgc gctagcgagc       960
gaagaaagcc cggagcaagg cgaaagagac                                        990
```

```
        <210> 29
        <211> 622
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 29
tttttttttt ttgtgttgat aaagctttat ttataaacac actcacaggg ccagatttgg        60
gccacgggcc atagttgcca gcccggcttt aactgctggt cctcacgtta gtctcactgc       120
ctcctgcagg gtgggcatgt gggtgtcgtg ttcacccagc cccttcctcc accccacaaa       180
caccctggtg gctgtcctgg agcgcgacac actgggcatc cgtgaggtgc ggctgttcaa       240
tgccgttgtc cgctggtccg aggccgagtg tcagcggcag cagctgcagg tgacgccaga       300
gaacaggcgg aaggttctgg gcaaggccct gggcctcatt cgcttcccgc tcatgaccat       360
cgaggagttc gctgcaggta acagagctcg ggctcagggg ctggtttggg aggggagtgg       420
cacacaggtg ggcatctggg taccgaggat agtgcccccg agttcactgc ggaaagcctg       480
gcagatgcct ggcatataca gataggaaga aacctggctt gtgaggacgc gtccacaggg       540
ccatctgtta gccccggccc ggctctgtcc ccaccgtgca cactgccaga ccccgcctct       600
cgtgtctgtc cagctgtttt gg                                                622
```

```
        <210> 30
        <211> 181
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(181)
        <223> n = a,t,c or g
```

<400> 30

```
tttttttttt ttgagacgga gntgngctct gtnacccagg ntagagtgca atggcacgnt      60
ctcggctcac tgcaagctct gcgtcctggg ttgacgccat tctcctgcct cagcctcccg     120
agtagctggg actacaggag cttcgccacc aattccagcc tggggtggac agagtgataa     180
g                                                                     181
```

<210> 31
<211> 1956
<212> DNA
<213> Homo sapiens

<400> 31

```
aaactccgaa cacatccaaa catcagaagg aacaaactcc agacacaccg cctttaagaa      60
ctgttacgct caccgcgagg gtccacggct tcattctcca agtcagacca agaacccacc     120
aattccggac acaaaaggcg tagcgtgcct cctgtgattg ttgaagagct gtggtgtgct     180
gctgagtggc gtgtgtattc catgtgaggg gaagggtcca acagtcctgg tcattcagac     240
tgcagttccc caggacagac ccacgaagtc aagcatgcgg agtgcagcca agccctggaa     300
cccagccatc agagcagggg gccacggccc agaccgggtg cggcctctgc ctgcagcctc     360
ttccggcatg aagagttcta agtcttcaac ttccttggct tttgagtccc gactcagcag     420
gctcaagagg gccagcagtg aggacacgct caacaagcca ggaagtaccg ctgcatcggg     480
ggtggttcgc ctgaagaaga ccgccactgc cggagccatc tcggagctca cggagagccg     540
cctgaggagc ggcacagggg cctttacaac aactaaacgg acaggcattc cagccccacg     600
ggaattttca gtaactgtct caagagagag gtctgtgcca cgtggtccct ccaaccccag     660
gaaatcagtg tccagtccaa cttcctccaa cactcccact cctacgaaac acctgaggac     720
cccttccaca aagcccaagc aagagaatga aggtggagaa aaggctgcgc ttgagtccca     780
agttcgggaa ctttttggcag aagccaaagc aaaagatagt gaaattaaca ggcttcgaag     840
tgaactaaag aaatacaaag agaaaaggac tctgaacgct gaggggactg atgctttggg     900
cccaaatgtc gatggaacat cagtctcccc aggtgacacg gaacctatga taagagctct     960
tgaggagaag aacaagaact ttcagaaaga gctttccgat ctagaggaag aaaaccgggt    1020
cctgaaggag aaactgatct atcttgagca ctccccaaat tcagaagggg cagcaagtca    1080
cactggcgac agcagctgcc caacatccat aactcaagag tcaagcttcg gaagcccaac    1140
tggaaatcag ttgtccagtg acattgatga gtataaaaaa aacatacatg gaaatgcatt    1200
acggacatca ggctcctcaa gtagcgatgt taccaaagct tctttgtcgc cagatgcttc    1260
cgactttgag cacattacag cagagacacc ctcaaggccc ctgtcctcca ccagtaaccc    1320
ctttaagagt tcaaagtgtt ctactgctgg gagttcccca aacagcgtaa gtgaattgtc    1380
cctggcttcc ctcacagaga agatacaaaa gatggaagaa aaccaccata gcactgcaga    1440
agaactacag gctactctac aagaattatc agaccagcaa caaatggtac aggaattgac    1500
agctgaaaat gagaagctgg tggatgaaaa gacgatttta gagacatcct ttcatcagca    1560
tcgagagagg gcagagcagc taagtcaaga aaatgagaag ctgatgaatc ttttacaaga    1620
gcgagtaaag aatgaagagc ccaccactca ggaaggaaaa attattgaac tggagcagaa    1680
gtgcacaggt attcttgaac agggccgctt tgaaagagag aagctactca acattcagca    1740
gcagttgacc tgtagcttgc ggaaggttga ggaagaaaac caaggagctt agaaatgat    1800
taaacgtctg aaggaagaaa atgaaaaact gaatgagttt ctagaactgg aacggcataa    1860
taataacatg atggccaaaa ctttggaaga gtgtagagtt accttggaag ggctaaaaat    1920
ggagaatgga tctttgaagt ctcatttgca gggtga                            1956
```

<210> 32
<211> 513
<212> DNA

14

<213> Homo sapiens

<400> 32
```
ctcagcacca caaggaagtg cgggacccac acgcgctcgg aaagttcagc atgcatgaag    60
tttggggaga gctcggcgat taacacagcg acccgggcca gcgcagggcg agcgcaggcg   120
gcgagagcgc agggcggcgc ggcgtcggtc ccgggagcag aacccggctt tttcttggag   180
cgacgctgtc tctagtcgct gatcccaaat gcaccggctc atctttgtct acactctaat   240
ctgcgcaaac ttttgcagct gtcgggacac ttctgcaacc ccgcagagcg catccatcaa   300
agctttgcgc aacgccaacc tcaggcgaga tgagagcaat cacctcacag acttgtaccg   360
aagagatgag accatccagg tgaaaggaaa cggctacgtg cagagtccta gattcccgaa   420
cagctacccc aggaacctgc tcctgacatg gcggcttcac tctcaggaga atacacggat   480
acagctagtg tttgacaatc agtttggatt aac                                513
```


<210> 33
<211> 712
<212> DNA
<213> Homo sapiens

<400> 33
```
acagacatgg ttccagctct gtagaactga gagaaagaat aaacaagtca cacattagcc    60
cttcaaaaag atgaccgacc tcttgagaag tgttgtcacc gtaattgatg ttttctacaa   120
atacaccaag caagatgggg agtgtggcac actgagcaag ggtgaactaa aggaacttct   180
ggagaaagag cttcatccag ttctgaagaa cccagatgat ccagacacag tggatgtcat   240
catgcatatg ctggatcgag atcatgacag aagattggac tttactgagt ttcttttgat   300
gatattcaag ctgactatgg cctgcaacaa ggtcctcagc aaagaatact gcaaagcttc   360
agggtcaaag aagcataggc gtggtcaccg acaccaagaa gaagaaagtg aaacagaaga   420
ggatgaagag gatacaccag gacataaatc aggttacaga cattcaagtt ggagtgaggg   480
agaggagcat ggatatagtt ctgggcactc aaggggaact gtgaaatgta gacatgggtc   540
caactccagg aggctaggaa gacaaggtaa tttatccagc tctgggaacc aagagggatc   600
tcagaaaaga taccacaggt ccagctgtgg tcattcatgg agtggtggca aagacagaca   660
tggttccagc tctgtagaac tgagagaaag aataaacaag tcacacatta aa             712
```


<210> 34
<211> 600
<212> DNA
<213> Homo sapiens

<400> 34
```
cagatttctc aggtgagctc agatagcaat ccactgtgtt cctttatctc cagcagatat    60
atatcaatat cttgaagcag ttttctactc aatttagaag aacttctggt taaatttaca   120
attctttttt ctctcccatg cttgttgttt ctcattcaaa caagactggc atagctactt   180
tatgagggta ggtctccctg aattttaagt tccaaagatc tctggacctg atcatattga   240
ctttattccg tgggatcaac tcttcatggc cagttcttcc tctgtcactg agttcttagt   300
gctgggcttc tctagccttg gggaattgca gcttgtcctc tttgcagtct ttctctgcct   360
```

15

```
ctatttgatt atcttgagtg gaaacatcat catcatctca gtcattcatt tggatcacag    420
cctccacaca cccatgtact tctttctagg tattctttct atctctgaaa tcttctacac    480
aactgttatt ctgcccaaga tgcttatcaa cttattctct gtattcagga cactctcctt    540
tgtgagttgt gccacccaaa tgttctacga aatcgtcggc ccgggaactc aggaacggtc    600
```

<210> 35
<211> 985
<212> DNA
<213> Homo sapiens

<400> 35
```
tttcgtccta ctgtccctgt cctgcccttg cagacatgtg tcctgccctt gcagacagcc    60
gcaggcaggc agggaccacc atgagcaacc ccgtctctcc tcctgagggg cagcacagag    120
cctggaggag gcctgagtgg ggttgaggcc tggggcgagc tggggtggag gggcactggc    180
tgccgggctc cagggatctt ctccccttcc tgccccggag ggtgctggca caggggtggg    240
gctcactccc actccgtaga cacaatgatc agaggtcctg ggtgtctggg gaagctgggc    300
tgtgcgtgta tgcgtctacc atgtgggggt gcctgtgagt gtgctggggc gtctgcagtg    360
aaggcctcct gagaccactc cacggaaaca ccgggaatcc ctgcagctga gcctgtctct    420
cacgggaccg ggaagctgga gagagcccca accctgcccg ctggggccga gctccctgct    480
cctgcagcag tcccgtgccc cacactctga gtctgcccta tccacagctg ctgggcctct    540
ctgtggccac catggtgact cttacctact tcggggccca ctttgctgtc atccgccgag    600
cgtccctgga gaagaacccg taccaggctg tgcaccaatg ggggactcag cagcgactta    660
tccaacatcc agagagcggg agcgagggcc agagcctgct ggggccactc agggccttct    720
ctgcggggtt gagcctggtg ggcctcctga ctctgggagc cgtgctgagc gctgcagcca    780
ccgtgaggga ggcccagggc ctcatggcag ggggcttcct gtgcttctcc ctggcgttct    840
gcgcacaggt gcaggtggtg ttctggagac tccacagccc cacccaggtg gaggacgcca    900
tgctggacac ctacgacctg gtatatgagc aggcgatgaa aggtacgtcc cacgtccggc    960
ggcaggagct ggcggccatc cagga                                          985
```

<210> 36
<211> 464
<212> DNA
<213> Homo sapiens

<400> 36
```
ccgtatcggc gtttatatac tgaagataag cctgatgagt aacaggcttg ctcgtcatac    60
tttcgtgagt attggcgttg tacaggcaag tcgtaaaata acagcctggc tattcagagt    120
atgataaaaa caggggggcaa gggatgttgc ttaatatgat gtgtggtcgt cagctgtcgg    180
caatcagttt gtgcctggcc gtaacattcg ctccactgtt caatcgcag gccgatgagc    240
ctgaagtaat ccctggcgac agcccggtgg ctgtcagtga acagggcgag gcactgccgc    300
aggcgcaagc cacggcaata atggcgggga tccagccatt gcctgaaggt gcggcagaaa    360
aagcccgcac gcaaatcgaa tctcaattac cgcaggtta caagccggtt tatcttaacc    420
agcttcaact gttgtatgcc gcacgcggta tttcctgcag cgtg                     464
```

```
       <210> 37
       <211> 429
       <212> DNA
       <213> Homo sapiens




       <400> 37
tcgcacaaga gctgctgatg tctatgtctt ttcgctcacg ggaaaatctc gaaacgtgag    60
ttcctcaacc gtgcggcgaa gtgcggtagg cgggatgtcg gcattagcgt tgtttgattt   120
gctcaagcca aattatgcgc tggcgactca ggtagagttt accgacccgg aaattgttgc   180
tgagtacatc acgtatcctt cgccaaatgg tcacggcgag gtgcggggtt atctggtgaa   240
gcccgcaaag atgagcggca aaacgccagc cgtagtggtg gtgcatgaga atcgtggact   300
gaatccgtat atcgaagatg tggcacggcg agtggcgaag gcggggtata tcgccctggc   360
acctgacggc ttaagttccg ttggaggtta tccgggaaat gatataaagg tggtatccgc   420
agcggcccc                                                           429




       <210> 38
       <211> 556
       <212> DNA
       <213> Homo sapiens




       <400> 38
gagaataacc tagacgttat tgacttgatg ccccgcgtcg gtaaggcgct ggataccacg    60
cagcgcggcg tgctgtttaa tgcagtaacc cgatggggca attaagtgaa acagagacat   120
ggcaattcct tgctgacaac agaaacgaaa tgtatatcat gccgcttagg tgtgccgttg   180
tcacctcaac ggcgattcca ggctataagg atagaagaag tgaaattgag atggtttgcc   240
ttttttgattg tgttattagc gggttgttca tcaaagcatg actatacgaa cccgccgtgg   300
aacgcgaaag ttccggtgca acgtgcgatg cagtggatgc caataagcca gaaagccggt   360
gcagcctggg gcgtcgatcc acaattgatc acggcgatta tcgctatcga atcgggtggt   420
aatccgaacg cggtgagtaa atcgaatgcc attggtttga tgcagttaaa agcttcaacc   480
tccggacgtg atgtttatcg ccgtatgggc tggagtggtg agccgacgac cagcgagctg   540
aagaattcct caagac                                                   556




       <210> 39
       <211> 890
       <212> DNA
       <213> Homo sapiens




       <400> 39
accacgctgc aggaattcgg cacgaggcca aaccaaagag aagtttttat gctgccaggg    60
atttgtacaa gtaccgacac cagtacccaa acttcaaaga tatccgatat caaaatgact   120
tgagcaatct tcgttttttat aagaataaaa ttccattcaa gccagatggt gtttacattg   180
aagaagttct aagtaaatgg aaaggagatt atgaaaaact ggagcacaac cacacttaca   240
ttcaatggct tttcccccctg agagaacaag cttgaacttt ctatgccaaa gaactaacta   300
catatgaaat tgaggaattc aaaaaaacaa agaagcaat tagaagattc ctcctggctt   360
```

```
ataaaatgat gctagaattt tttggaataa aactgactga taaaactgga aatgttgctc    420
gggctgttaa ctggcaggaa agatttcagc atctgaatga gtcccagcac aactatttaa    480
gaatcactcg tattcttaaa agccttggtg agcttggata tgaaagtttt aaatctcctc    540
ttgtaaaatt tattcttcat gaagctcttg tggagaatac tattcccaat attaagcaga    600
gtgctctaga gtattttgtt tatacaatta gagacagaag agaaaggaga aagctcctgc    660
ggttcgccca gaaacactac acgccttcag agaactttat ctggggaccg cctcgaaaag    720
aacagtcgga gggaagcaaa gcccagaaaa tgtcttcccc tctcgcctcc agtcataaca    780
gtcaaacttc tatgcacaaa aaagccaagg actccaaaaa ttcctcctca gctgttcatt    840
taaatagcaa aacagctgaa gacaaaaaag tggcaccaaa agagcctgtg               890
```

```
        <210> 40
        <211> 393
        <212> DNA
        <213> Homo sapiens




        <400> 40
accggctgcc atcttagtct agggactgag gagtcgccgc cgccccgagt cccggtacca    60
tgcatttcac ggtggccttg tggagacaac gccttaaccc aaggaagtga ctcaaactgt   120
gagaacttca ggttttccaa cctattggtg gtatgtctga cagtggatca caacttggtt   180
caatgggtag cctcaccatg aaatcacagc ttcagatcac tgtcatctca gcaaaactta   240
aggaaaataa gaagaattgg tttggaccaa gtccttacgt agaggtcaca gtagatggac   300
agtcaaagaa gacagaaaaa tgcaacaaca caaacagtcc caagtggaag caacccctta   360
cagttatcgt tacccctgtg agtaaattac att                                 393
```

```
        <210> 41
        <211> 437
        <212> DNA
        <213> Homo sapiens




        <400> 41
gcattccttg aaagaaatgt tacagccaga tcacagcgca gaacgataaa atggcacaat    60
ccaacaacaa ttttacattt tcgcgaccgc tttggctgct ttcaggtccg tttcaatgat   120
atactgccag tcgttaattc aaaaatagtt gataattaca acaatctatt gaattgaaac   180
gctttccttc gtaattcgca actggaacac gcacgctatg agtaaaccca ttgtgatgga   240
acgcggtgtt aaataccgcg atgccgataa gatggccctt atcccggtta aaaacgtggc   300
aacagagcgc gaagccctgc tgcgcaagcc ggaatggatg aaaatcaagc ttccagcgga   360
ctctacacgt atccagggca tcaaagccgc aatgcgcaaa aatggcctgc attctgtctg   420
cgaggaagcc tcctgcc                                                   437
```

```
        <210> 42
        <211> 392
        <212> DNA
        <213> Homo sapiens
```

```
       <400> 42
tcccctgcgt caattttcct gacagagtac gcgtaataac caaatcgcgc aacggaaggc      60
gacctgggtc atgctgaagc gagccaccag gagacacaaa gcgaaagcta tgctaaaaca     120
gtcaggatgc tacagtaata cattgatgta ctgcatgtat gcaaaggacg tcacattacc     180
gtgcagtaca gttgatagcc ccttcccagg tagcgggaag catatttcgg caatccagag     240
acagcggcgt tatctggctc tggagaaagc ttataacaga ggataaccgc gcatggtgct     300
tggcaaaccg caaacagacc cgactctcga atggttcttg tctcattgcc acattcataa     360
gtacccatcc aagagcacgc ttattcccca gg                                   392
```

```
       <210> 43
       <211> 555
       <212> DNA
       <213> Homo sapiens
```

```
       <400> 43
tggctcgcgc gtcataatgg gagttttgat actgtggatt gccggttcga tgtggtagcc      60
ttcaccggga atgaggttga gtggattaag gatgccttta atggccactc ataattaagg     120
tttaaggatt agcgtgcaag aaagaattaa agcttgcttc actgaaagca ttcaaactca     180
aattgcggcg gcagaggcgc ttccggatgc catctcccgt gcagccatga cgctggttca     240
gtctctgctc aatggcaaca aaatcctctg ttgtggtaat ggaacttccg ctgccaatgc     300
acagcatttt gctgccagca tgatcaaccg tttcgaaacg gagcggccca gcttacctgc     360
cattgcacta aatactgata atgttgtctt aacggcgatt gccaacgatc gcttacatga     420
tgaagtgtat gcaaaacagg tgcgggcgct gggtcatgcg ggagatgtat tgttagccat     480
ttccaccccgt ggcaacagcc gcgatattgt taaagcagtt gaagccgccg ttacgcgtga     540
tacgaccatt gtggc                                                      555
```

```
       <210> 44
       <211> 553
       <212> DNA
       <213> Homo sapiens
```

```
       <400> 44
ctatgacctg attacaattc aggtccgacc cgagatctcc aaaatgccag gacgctgtgg      60
ctacacaagc taaccatgct gattaatgaa aagaaactca acatgatgaa tgccgagcac     120
cgcaagctgc ttgagcagga gatggtcaac ttcctgttcg agggtaaaga ggtgcatatc     180
gagggctata cgccggaaga taaaaaataa aaacagtgcc ggagcacgcc tccggcaact     240
tgcataaaaa caaacacaac acgcacccgg aatgatgaaa aaatatctcg cgctggcttt     300
gattgcgccg ttgctcatct cctgttcgac gaccaaaaaa ggcgatacct ataacgaagc     360
ctgggtcaaa gataccaacg gttttgatat tctgatgggg caatttgccc acaatattga     420
gaacatctgg ggcttcaaag aggtggtgat cgctggtcct aaggactacg tgaaatacac     480
cgatcaatat cagacccgca gccacatcaa cttcgatgac ggtacgatta ctatcgaacc     540
catccccggg aca                                                        553
```

```
        <210> 45
        <211> 310
        <212> DNA
        <213> Homo sapiens



        <400> 45
tctcgttacg acttcgagcg ttggacccgg ggatctctct actatcgctg caagcgagcc        60
agaaaaaact ggatgaactg atcgaacagc actaaaccca ggacaggaat ccgcaatgaa       120
caggcttttt tcaggtcgtt ccgatatgcc ctttgcgctg ctgcttctcg cgcccagctt       180
attactgctg ggcggtctgg tggcgtggcc gatggtgtcg aatatcgaaa tcagtttttt       240
acgtctgccg ctcaatccca acatcgagtc aacgtttgtt ggggtgagca actatgtgcg       300
tatcctctcc                                                              310



        <210> 46
        <211> 627
        <212> DNA
        <213> Homo sapiens



        <400> 46
ctcgctgact cgcttcgctt ccccgacgcg ctgggttccc ggagcgcaga gcccagcgtt        60
agcgggtggg ctccccgagg ccccctgccc tcgccgggct gctccagggt gtcgctcctc       120
tggctgctcc cgaaggggct tctggccctg aggacggtgg tgccaagcga acttcatttt       180
taaaaagaac tggtggatga aagagcgag cgaggcgag ctatggaccc tgtgagtcag         240
ctggcctctg cgggcacctt ccgggtgctg aaggagcccc ttgccttcct gcgagccctg       300
gaattgcttt ttgcaatctt tgcatttgca acatgcggtg gctattctgg aggcctgcgg       360
ctgagtgtgg actgcgtcaa caagacagaa agtaacctca gcatcgacat agcgtttgcc       420
tacccattca ggttgcacca ggtgacgttt gaggtgccca cctgcgaggg aaaggaacgg       480
cagaagctgg cattgattgg tgactcctcg tcttcagcag agttcttcgt cactgttgct       540
gtcttcgcct tcctctactc tttggctgcc actggtcgtt acattttctt tcacaacaaa       600
aaccgggaaa acaaccgggg cccactg                                           627



        <210> 47
        <211> 998
        <212> DNA
        <213> Homo sapiens



        <400> 47
acctgggcac cgtgtcctat ggcgccgaca cgatggatga gatccagagc catgtcaggg        60
actcctactc acagatgcag tctcaagctg gtggaaacaa tactggttca actccactaa       120
gaaaagccca atcttcagct cccaaagtta ggaaaagtgt cagtagtcga atccatgaag       180
ccgtgaaagc catcgtgctg tgtcacaacg tgaccccgt gtatgagtct cgggccggcg       240
```

```
ttactgagga gactgagttc gcagaggctg accaagactt cagtgatgag aatcgcacct    300
accaggcttc cagcccggat gaggtcgctc tggtgcagtg gacagagagt gtgggcctca    360
cgctggtcag cagggacctc acctccatgc agctgaagac ccccagtggc caggtcctca    420
gcttctgcat tctgcagctg tttcccttca cctccgagag caagcggatg ggcgtcatcg    480
tcagggatga atccacggca gaaatcacat tctacatgaa gggcgctgac gtggccatgt    540
ctcctatcgt gcagtataat gactggctgg aagaggagtg cggaaacatg gctcgcgaag    600
gactgcggac cctcgtggtt gcaaagaagg cgttgacaga ggagcagtac caggactttg    660
aggtgagccg actcccaggc atcccatcct cctacgacgg tgccttcctt acgctgaaat    720
tagttcttcc tgtctttgta tgaaattaga gctgggatcg ctatagtcta ggagtgaagg    780
cagcttcgct cagcaggagc atggggggat cctgtctgca tttctgtttc caccatttct    840
ccagcttgct ggggaaggag ggttacagaa gcaaagaagt gccagtttcc ttagaattgt    900
gcttgataac tcctcaatga tcacacgcca gccgagctga gtacacataa gagtatgtgc    960
acataggcgc ctcccctct gtccccagag cccatgcg                            998
```

```
<210> 48
<211> 864
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(864)
<223> n = a,t,c or g
```

```
<400> 48
tttttttttt ttgagacaca gtctggctat gtcacccagg ctgagtacag tagcatgatc     60
ctggttcgct gcaacctcca cctcccaggc tcaagtgatc ctcccacctc agcctcctga    120
gtagctagga ctacaggtac gtgccacaac acctggctaa ttttttttatt ttttgtagag    180
acaagggtct ccctacgttg tccaggctgg acttgaactc ctgggttcaa gcgatcctac    240
caccttggcc tcccacagca ctggggttac aggcaggagc cactgcacct ggccctgtct    300
ttactgatgg tcctgcccca tgcctcccac acctaaccct gggcacccac tcccgaagct    360
ctcctactgg ctgcagggtc tgcctctgtg aggacagtga agccgatgac acgggaggtg    420
aagtcgaagg ccgtctgctg gccatcgtgg atcactgaga tgcagtggcg gtccccgtag    480
ctggcccgtg gcatgccacc ctggaagatg gtgaagggca acccctgcct agtggtcagc    540
cagaggattc tggtaatcgc tttgcaagga aagggaccgt aaggcacgag ctgcggagg    600
ggctctggtt gctgggcttc gctggacacg ggcccactgg cagtagctgc cgtcagagtg    660
acagctgacg agcaggcggc cgtcccgctg ccaccagatg ttctccagtt gctggctgct    720
gaggaagtgg tagagcacgc ggctgccctg taggtcccag atgacaacga ggcctcggct    780
gtagccgatc aggatctggt tggggtcttc aggtgcttcc tgcatgcttt caccatttng    840
aacaaacagc cggtgggggc cctc                                          864
```

```
<210> 49
<211> 1327
<212> DNA
<213> Homo sapiens
```

```
<400> 49
tttcgtgagc atttgagggc tgtttatgat ctatggggta aaactctctg actgactgga     60
```

```
tgaggaaaat gaaatgcgag agggttgagc ccaaggttca ttcatctgct caatcgaggc    120
cactcattct ggccactgtg tgccagatgc tggggattct gtcctcttgg gagctgacgt    180
agcccaggtg gtggctgtgg gctgctggag gtggggatcc aggtggagga gcaagtctag    240
ggaagtgtgc tggggaggcc ctctctgagg aggtgacatg ccagctgaga tctgaatggc    300
aggaaggagt ggccatgagg acatgggtga tgacagtctg ggtagaaaga tgaaggaggg    360
gaagcaggta aggagttgtg atctaattct gggagccact ggagggtgaa agcagggatt    420
agaagtcagg gatttacatt ttaaagagat cacctctggc agggctttgt taagagtggc    480
ctgcaagagg ccaagcatgg ttccaggggg ccagttgcag agggctggtg caggagccca    540
ggcaaggatt acgggctca gtcctgccct gtggggagca agagtacacg gctggattcc    600
agagctgcca gcaggcctac cccctggggc ctgcctgtgg cctctcatcc ctgcctgtcc    660
cagtagacac tgggggtggg taagtgctcc cgtgaagggg gggcccaggc gattctgggt    720
ctggccctgt gtctacaggg gagcaccgtg gcctgggcgc tggcgtctcc aaggtgcgga    780
gcctgaagat ggacaggaag gtgtggacag aaacacttat cgaggtgggg atgcccctgc    840
ttgccaccga tacttggggt ctgccccatt caacagctgt ctgggtctcc cagcccctc    900
cctatctcag tgaccacagc accttggagc tggaaagaga ccctttgtga taatatagtg    960
ggtgggggatt tcggaaaagc aattttggc aaagtcagca aactggccag tgagctaaga   1020
atgttttat agttgtaaag tgttattttt ttttaaagaa aaaaaagga agaaaatgca   1080
gcagagactg tatgtgttct gtaaagccga aaataattac tatttcgccc tttagagaaa   1140
gaatttgcta acttctgatc taatttcact gtcatccatt gaatagatgt gtaaactgag   1200
gtcctgggca gggctgtaat ctgcctgaga ttaccctgta aatgcatatt gaccaccatc   1260
cctgcctctt tctgtcccac ttctgaatga cccagggcct tctcccctac cttgcacagc   1320
ctgtatt                                                             1327
```

```
<210> 50
<211> 436
<212> DNA
<213> Homo sapiens
```

```
<400> 50
ctgtcgtgca attccgagca ggcactgctc agtctggtgc ctgtgcagag ggagctactt     60
cgaaggcgct atcagtccag ccctgccaag ccagactcca gcttctacaa gggcctaggt    120
acctgccctt cccagctgag gctttctgag cccccaccga ccccagaca cctcagcgta    180
gcctctgtct cccatcacat gttcccctct catcgctccc tttgcccaca tcttccagac    240
ttcttcgccg ccccattccc atcagacaat ctccctaca ccctccagtc ccctttcccc    300
tcacctcctc cagctactcc ctctgaccat gctcttatcc tccaccacag acttaaatgg    360
gggcccagat gaccctctgc agcagacagg ccagctcttc gggggcctgg tgcgtgatat    420
ccggcgccgc tacccc                                                    436
```

```
<210> 51
<211> 481
<212> DNA
<213> Homo sapiens
```

```
<400> 51
tcgcctagca gtaagttggt tggcatgtgg tgggcaggca gggctggcag tagtcggacc     60
acttcagtct ccctgctctg ccttccccag caccattcgg tgcctcgaac ctcctggtga    120
acccccctgga gccccaaaat gcagataaga tcaagatcaa gatcgcagac ctgggcaacg    180
cctgctgggt ggtatgagca agtgtgggag agcagagtgg ggggccctgc tccaagggtg    240
```

22

```
gaggcacagg gccgctcttg gggagcccta ccccagtctg cagtgcacgt gaaccgtcgg      300
ctgggtgggc actggtcctg cccagtcaac agcactgggg ccatggccaa gggcaggggc      360
cactaggaag ggatcagcct cagcctcaga tcactggccc tgtccctctt ggaggacctg      420
gggaccccga ggctcacagc aaaccccact gagcttctcg ggtaggcgga tcggggtggg      480
g                                                                      481
```

```
<210> 52
<211> 435
<212> DNA
<213> Homo sapiens
```

```
<400> 52
cccgggtcga cccacgcgtc cgagctcctc gttgtggaga caagatcaaa aatcatatgt       60
atagaatgtg actgtggctc ccttaaagat tgtgccagtg atagatgttg tgagacctct      120
tgtacccttt ctcttggcag tgtttgcaat acaggacttt gctgccataa gtgtaaatat      180
gctgcccctg gagtggtttg cagagacttg ggtggtatat gtgatctacc ggaatactgt      240
gatgggaaaa aggaagagtg tccaaatgac atctacatcc aggatggaac cccatgttca      300
gcagtatctg tttgtataag aggaaactgc agtgaccgtg atatgcagtg tcaagccctt      360
tttggctacc aagtgaaaga cggttcccca gcgtgctatc gaaaattgaa taggattggt      420
aaccgatttg gaacg                                                       435
```

```
<210> 53
<211> 728
<212> DNA
<213> Homo sapiens
```

```
<400> 53
ccgggtcgac ccacgcgtcc ggacgccagt ttagcccagg tccacggact acaatgtttc       60
gtattcctga gtttaaatgg tctccaatgc accagcggct tctcactgat ttactatttg      120
cattagaaac tgatgtacat gtttggagga gcccattcta caaagtctgt aatggatttt      180
gtcaatagca atgaaaatat tatttttgta cataacacaa ttcacctcat ttcccaaatg      240
gtagacaaca tcatcattgc ttgtggagga attttacctt tgctctctgc tgctacatca      300
ccaactggtt ctaagacgga attggaaaat attgaagtga cacaaggcat gtcagctgag      360
acagcagtaa ctttcctcag ccggctgatg gctatggttg atgtacttgt gtttgcaagc      420
tctctaaatt ttagtgagat tgaagctgag aaaaacatgt cttctggagg tttaatgcga      480
cagtgcctaa aattagtttg ttgtgttgct gtgagaaact gtttagaatg tcggcaaaga      540
cagagagaca ggggaaataa atcttcccat ggaagcagta aacctcagga agttcctcaa      600
agtgtgactg ctacagcagc ttcgaagact ccattggaaa atgttccagg taacctttct      660
cctattaagg atccggatag acttcttcag gatgttgata tcaatcgcct tcgtgctgtt      720
gtctttcg                                                              728
```

```
<210> 54
<211> 2228
<212> DNA
```

23

<213> Homo sapiens

```
<400> 54
tttttttttt ttcctgaaat gtaaattgtt tttaatatat ttaagagcac acagaagtct      60
tgatttataa aaaaataaat atataacatg acaaatttac tgatgatcct ggagctctga     120
ggtcaaactc tttaaatgat cagtgaaaac ataaaacatc catgatctgt taacacacac     180
aggagcatat tccagttgta aaaaacaaat tccttgaagg ctcagaacga acaaaaatca     240
gtctttatgg cagaaagcac atccaaagct aggcaatgaa gttcagcctg ggccacgtga     300
acctttcacc agccagccta taacctatgg agccaggaca ggaaagcatg atccttcagc     360
tcatgacgcc acccaggctt ccagacaact gcagaatgaa agagtccctc agaggctccc     420
cagcccctgc tgccatcata aagcacggga gggattgttt tgtccttagc ggctctgtcc     480
taaatttgag agcaggagac tgagaaggtt atgctcatta aatattgtca ttgtaacacg     540
gaatggaaat catgatcctt gcccatgggc actgagctga aagaaagagg aacctcacat     600
gaggctttcc tagagaccag gatgttgggt gagtgggcgt gcacttctca agtgggcaag     660
gaagaactgc ttttctccag ctgacatgct ctcaggggtg aagaagttta gcttaaaata     720
cctgatggcg ctgcataaac tggggatttg ggaactgagt ttttagctct gtgacacaca     780
acataaaaaa caaaaatcca gtctcattag ctaaattcgg attaaaatct gaaatgtttt     840
tatggagttg ccaacaggct ggaatgtacc tgatacaatt taatctgctt ttatttcttt     900
ggctgtcttc caaaccactt tcttcctgta attcttaagt tggctagttc tccttcctca     960
gaaaaattac ccctaagaat cttcctaata gtgagggtgt acttccgaat agaagagtcc    1020
ttcggctgaa atggcatctc caaggcctac agttcgaatg gggtctttac acaccaatac    1080
tggtgtgaag tggaaggata ttccctctct gtgccattct actactggct tgtttgggtt    1140
taatacaatc ctggagcctg cctccgaatg ggaagtcatg aactcttggg gtgccctcag    1200
agacactcgg ctggtgtcta tggtttctgt ggcgcaggcc tgtgtcccag ccacacgagc    1260
tcctgcagcc acggctgcca gctggttggc ccagtgtcca tccacagttg ccaggatgtg    1320
gtagaccagc gtgtggaaat ggatcctggt gagatccgag gctctgcttt tactcctccc    1380
atgttctttc aagatccaga agaggatgtc actgaccatg cccacatcag gaacaccgtt    1440
ccaggaagag agagaagagt gaggtccaga ggctgactgg gtgagaaata acagctcctg    1500
ttcattcagc ccaagggaag tcaccgcggg aaagacctgc tgaaggaaca atgctgctca    1560
tgagctccct gttagtcata ctggcccagc tctaggtgaa actggaatac cagtggggat    1620
gtcagaaatg gaggttacaa cctccaagag tctcttcctc tggagctcct tgctttgtcc    1680
ctccatcatg tgcaatccag agaggccccc caggtctggc tgaaactcct ccaggctaga    1740
cacaaacacc tccagcatat tcatggcccc gttggagagg tcgtgagaga agatgaatcg    1800
gttggcatgg ggagctttta actggcccca ctcctcccct gcttgatact ctaaaatgag    1860
gtggaactca tccacttcct gcaatgactc tggtggaaca aagacattgt catcaagaag    1920
ctcatgtagc tttggaccaa ctggaccgca aagaagaacc tttaaatctg agttggctgc    1980
aaatttctgt ccaattaaag ctgcatttcc tcctacatag tgctgggctc ctgggaactc    2040
tgacgcaacc tgggcaatgt cgtgaaaagt ttccttatca ctgaagaagc gctcagcagc    2100
tgctcccttc cccatgaagt gaatgaaggc ttcttccaga tcattccttg aatgcagaat    2160
gctgtgatct ttcccattcc caggactaag gccaagtgcc tgcaagagct tcacccctga    2220
ggaattca                                                            2228
```

<210> 55
<211> 405
<212> DNA
<213> Homo sapiens

```
<400> 55
gcaggagttc aagaccaacg tggccaacat ggggaaagcc catcactact aaaaatacaa      60
aaactagcca ggcgtggtga cacacatctg taatcccagc tactcgaggc gctgaggcag     120
gagaatcact tgaaccagga ggcagaggtt gcagtgagcc gagatcatgc cactgcactc     180
cagcctgggc cacagagcaa gactccatct gacaactagc tgttccagcc cccagccact     240
```

```
tgagtcatct cagctgaggc cccacacacc aagaagcaga ggtgagtcta atccacagag    300
ccctggtcag acatgatgac ggtggcttca cccggggggtc tccgcacagc agcggcctcg    360
ggtaagcaga acctcgctcc ggggtttaca aatccttcct cgtgc                    405
```

```
<210> 56
<211> 1652
<212> DNA
<213> Homo sapiens
```

```
<400> 56
actaggggag gtgctcaagt gccagcaggg cgtatccagt ctggcctttg ccctggcctt     60
cttgcagcgc atggacatga agccgctggt ggtcctgggg ctgccggccc ctacggctcc    120
ctcgggctgt ctttccttct gggaggccaa ggcgcagctg gccaagagct gcaaggtgct    180
ggtagacgcg cttcgacaca acgccgccgc tgctgtgcca ttttttggcg gcgggtctgt    240
gctacgcgct gccgagccgg ctccccatgc cagctacggc ggcatcgtct cggtggagac    300
agacctgctg cagtggtgcc tggagtcggg cagcatcccc atcctgtgcc ccatcgggga    360
gacggccgcg cgccgctccg tgcttctcga ctccctggag gtgaccgcgt cgctggccaa    420
ggcgctgcgg cccaccaaaa tcatcttcct caataacaca ggcggcctgc gcgacagcag    480
tcataaggtc ctgagtaacg tgaacctgcc cgccgacctg gacctggtgt gcaacgccga    540
gtgggtgagc acaaaagaac ggcagcagat gcggctcatc gtggacgtgc tcagccgcct    600
gccccaccac tcctcggccg tcatcaccgc cgctagcacg ctgctcactg agctctttag    660
caacaagggg tccgggaccc tgttcaagaa cgccgagcga atgctacggg tgcgcagcct    720
ggacaagctg gaccagggcc gtctagtgga cctggtcaac gccagcttcg caagaagct    780
cagggacgac tacctggcct cgctgcgccc gcggctgcac tccatctacg tctccgaggg    840
gtacaacgcc gccgccattc tgaccatgga gcccgtcctg gggggcaccc cgtacctgga    900
caaatttgtg gtgagctcca gccgccaggg ccaaggctcc ggccagatgc tgtgggagtg    960
cctgcggcgg gaccttcaga cacttttctg gcgctcccgg gtcaccaacc ccatcaatcc   1020
ctggtacttc aaacacagtg atggcagctt ctccaacaag cagtggatct tcttctggtt   1080
tggcctggct gatatccggg actcctatga gttggtcaac cacgccaagg gactgccaga   1140
ctcctttcac aagccagctt ctgacccagg cagctgaccc tcaccatgga cactacaggc   1200
cctggaatgg ccagggtgga ccaaaagcca tgcccagctg ggcatgaccc caggcagcca   1260
gccacaggct gaagggggct tgttggctga gtgatctgca gaggagaaag cagcccccag   1320
ctctgcccca gaggaggcgc tgaagtggga caagcacagg aaagaagggg accagtctag   1380
gaccccaact tgactcactc taaagctaca accaaatggc cttcgatttt caacctgggg   1440
attaggggag gggagggtgc cttccagggc tcttactcag gacttaaccc ttaagggtga   1500
gcttagtttc tgtcctcttg tgcttatgtt ttgaggctcc cttacccaaa ataatacccc   1560
tgcctgcgtg atattctacc attcatttta attcctttgg gtcttgcagt ttttcaggag   1620
gccttgatta aaatgcaaat acttgtctga ga                                 1652
```

```
<210> 57
<211> 1129
<212> DNA
<213> Homo sapiens
```

```
<400> 57
ttttttttt ttgagacgga gtctcgctct gtggcccagg ctggagtgca gtggcgcgat     60
ctcggctcac tgcaagctcc gcctcccggg ttcacgccat tctcctgcct cagcctcccg    120
agtagctggg actacaggcg cccgctacca cgcccggcta attttttgta ttttttagtag   180
```

25

```
agacggggtt tcaccgtgtt agccaggatg gtctcgatct cctgacctcg tgatccgccc      240
gcctcggcct cccaaagtgc tgggattaca ggcgtgagcc accgcgcccg gcccatttac      300
taaatgttaa gttccttata attccatctc tttcagcacc caatacaggg gtttacatag      360
aggaagtact caatatttcc tttctttttt tcttttttttt ctggagatag tctcgctctg      420
tcaccaggct ggagtgcagt ggcgtaatct cggctcactg caacctccac ctcctgggtt      480
cacgccattc tcctgcctca gcctcccgag tagctgggac tacaggcgcc caccatcacg      540
cccggctaat ttttttttgta tttttagtag agatgggggtt tcaccgtgtt agccaggatg      600
gtctcgatct cctgaccttg tgatccgccc gcctcggcct cccaaagtgc tgggattaca      660
ggtgtgagcc accgcgcccg gcctaaaaaa attttttttt tcttgagaca aagtcttgct      720
ctgttgccca ggctgaagtg caggggcatg atatcagctc attgcaacct ccacctcccg      780
ggttcaagcg attctcctgc ctcagcctcc cgagtagctg ggattacagg tgccctccgc      840
cacgtccagc taattttctg tttttttagta gagacggggt ttcaccgtgt tagccaggat      900
ggtctcgatc tcctgacctc gtgatccacc tgcctcagcc tcccaaagtg ctgggattac      960
aggcgtgagc cactgagccc agccccattt tatttcattt ctctaacagc aatgatatat     1020
atacatccca tagtatatcc tactgatata atagccccctt tccccattca acacctgtgt     1080
aatcaggaaa taaaaccctc gtgcagcatt ggcgtctgga tagtcctcg                 1129
```

```
        <210> 58
        <211> 475
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 58
        gttccgccca attggcataa tacgccaagc cctgtgctct gcagacggcc accagagaag      60
        gatccttact ctgcgcctgg gattgctcgt tatcccgttt ctccccgcaa gtaacctgtt     120
        cttccgagtg ggcttcgtgg tcccgagcgt ggggtgctgt gtgatgctgc ttttttggatt     180
        cggagcctgc gcaaacacac cgagaaaaag aagctcatcg ctgccgtggt gctgggaatc     240
        ctactcagca agatgctgag aggctgagat gcgcggtgcg cggcggcgag tggcggagcg     300
        aggggcggtt ttcagaggcg ctgtgtctgt gtgtcccctc agtgctgagg ttcgctgcaa     360
        catcggcaga aacctggctg ctaaaggcaa ccaaacgggc gccatcagat accaccggga     420
        agctgtaagc ttaaatccca agacgaaatc gtcgacacgg gaattccggc cttgc          475
```

```
        <210> 59
        <211> 711
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 59
        ggaaaatagc agattttggg ttcagtaacc tcttcactcc tgggcagctg ctgaagacct      60
        ggtgtggcag ccctccctat gctgcacctg aactctttga aggaaaagaa tatgatgggc     120
        ccaaagtgga catctggagc cttggagttg tcctctacgt gcttgtgtgc ggtgccctgc     180
        catttgatgg aagcacactg cagaatctgc gggcccgcgt gctgagtgga aagttccgca     240
        tcccattttt tatgtccaca gaatgtgagc atttgatccg ccatatgttg gtgttagatc     300
        ccaataagcg cctctccatg gagcagatct gcaagcacaa gtggatgaag ctaggggacg     360
        ccgatcccaa ctttgacagg ttaatagctg aatgccaaca actaaaggaa gaaagacagg     420
        tggaccccct gaatgaggat gtcctcttgg ccatggagga catgggactg gacaaagaac     480
        agacactgca gtcattaaga tcagatgcct atgatcacta tagtgcaatc tacagcctgc     540
        tgtgtgatcg acataagaga cataaaaccc tgcgtctcgg agcacttcct agcatgcccc     600
```

```
gagccctggg cctttcaagc accagtcaat atccaggcgg agcaggcagg tactgctatg        660
aacatcagcg ttccccaggt gcagctgatc aacccagaga accaaattgt g                 711
```

```
        <210> 60
        <211> 344
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 60
ggcacgagaa tttttaggcc accgagcttc tataacatgg tcatgagctc gggtgcacca         60
tagatttccc aaagctgagg ttgcataacc cctctgctga ggacagatct taccgaagat        120
cgcacgaagt gctgccatgg agatctgctt gaatgcgctg atgacagggc agaccttgtc        180
gaggatatct gggaaaatca agattcaatc tccactatac tgattgaatg ctgtgaaaaa        240
cctctgttgg aaaaatccca ctgcattgcc gaagtggaaa atgatgagat gcctgctgac        300
ttgccttcat tagctgctga ttttgttgaa agtaaggatg tttg                        344
```

```
        <210> 61
        <211> 594
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 61
gcttgagctc gagcgacggc gctggcggag acgccggctg ctcctcccct ccccgccgct         60
tttcctaaaa ggattgtaca ccttagaagt gcttaaggaa gagtgatgaa gctctgaatc        120
gtgtcctgca gcagattctg agtgccaccc aagatgaaga gagggacaag cttgcatagt        180
aggcggggca agccagaggc cccaaaggga agtccccaaa tcaacaggaa gtctggtcag        240
gagatgacag ctgttatgca gtcaggccga cccaggtctt catccacaac tgatgcacct        300
accggctctg ctatgatgga aatagcttgt gctgctgctg ctgctgctgc tgcatgtcta        360
ccaggagagg agggaactgc ggagcggatc gaacggttgg aagtaagcag ccttgcccaa        420
acatccagtg cagtggcctc cagtaccgat ggcagcatcc acacagactc tgtggatgga        480
acaccagacc ctcagcgcac aaaggctgcc attgctcacc tgcagcagaa gatcctgaag        540
ctcacagaac aaatcaagat tgcacaaaca gcccgacgaa atcgtcgacc cggg             594
```

```
        <210> 62
        <211> 1609
        <212> DNA
        <213> Homo sapiens
```

```
        <220>
        <221> misc_feature
        <222> (1)...(1609)
        <223> n = a,t,c or g
```

27

```
        <400> 62
cgaagttatg gccttcctta taaggaaaag gggtggattg gaggaatcgc caattgaagt        60
ttcgaaggat cgctttagct gaatatcaga gaaccttgtg aagatcttaa agagcaacta       120
aagcataaag aatttcttct ggctgctaat acttgtaacc gtgttggtgg tctttgtttg       180
aaatgtgctc agcatgaagc tgttctttcc caaacccata ctaatgttca tatgcagacc       240
atcgaaagac tggttaaaga aagagatgac ttgatgtctg cactagtttc cgtaaggagc       300
agcttggcag atacgcagca aagagaagca agtgcttatg aacaggtgaa acaagttttg       360
caaatatctg aggaagccaa ttttgaaaaa accaaggctt taatccagtg tgaccagttg       420
aggaaggagc tggagaggca ggcggagcga cttgaaaaag aacttgcatc tcagcaagag       480
aaaagggcca ttgagaaaga catgatgaaa aaggaaataa cgaaagaaag ggagtacatg       540
ggatcaaaga tgttgatctt gtctcagaat attgcccaac tggaggccca ggtggaaaag       600
gttacaaagg aaaagatttc agctattaat caactggagg aaattcagag ccagctggct       660
tctcgggaaa tggatgtcac aaaggtgtgt ggagaaatgc gctatcagct gaataaaacc       720
aacatggaga aggatgaggc agaaaaggag cacagagagt tcagagcaaa aactaacagg       780
gatcttgaaa ttaaagatca ggaaatagag aaattgagaa tagaactgga tgaaagcaaa       840
caacacttgg aacaggagca gcagaaggca gccctggcca gagaggagtg cctgagacta       900
acagaactgc tgggcgaatc tgagcaccaa ctgcacctca ccagacagga aaaagatagc       960
attcagcaga gctttagcaa ggaagcaaag gcccaagccc ttcaggccca gcaaagagag      1020
caggagctga cacagaagat acagcaaatg gaggcccagc atgacaaaac tgaaaatgaa      1080
cagtatttgt tgctgacctc ccagaataca tttttgacaa agttaaagga agaatgctgt      1140
acattagcca agaaactgga acaaatctct caaaaaacca gatctgaaat agctcaactc      1200
agtcaagaaa aaggtatac atatgataaa ttgggaaagt tacagagaag aaatgaagaa      1260
ttggaggaac agtgtgtcca gcatgggagg agtacatgag acgatgaagc aaaggctaag      1320
gcaggtggat aagcacaggc aggccacagc ccaggaggtg gtgcaggtcc ccagaagcag      1380
gaccngcttc ttccnggaga gggagggnct gtcggaagag gtgggnccgn cttggggncc      1440
nngttaccca gnatncncaa tcttttttgg ttgacccggt tggacagggt ggacttnant      1500
gttttncaaa ggngnttttt cattccanct tgttttngct taatttngcn caacgnaccc      1560
acggcctncc cggnntgaaa ccccccnccc tgaggggggg ttntccccc                  1609
```

```
        <210> 63
        <211> 615
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 63
catcctatcc cgtgtggtgg aattcgccgc tgactgctga ggtgccaccc gagctgctgg        60
ctgctgccgg cttcttccac acaggccatc aggacaaggt gaggtgcttc ttctgctatg       120
ggggcctgca gagctggaag cgcggggacg acccctggac ggagcatgcc aagtggttcc       180
ccagctgtca gttcctgctc cggtcaaaag gaagagactt tgtccacagt gtgcaggaga       240
ctcactccca gctgctgggc tcttgggacc cgtgggaaga accggaagac gcagccctg        300
tggcccctc cgtccctgcc tctgggtacc ctgagctgcc cacacccagg agagaggtcc       360
agtctgaaag tgcccaggag ccaggagggg tcagtccagc cgaggcccag agggcgtggt       420
gggttcttga gcccccagga gccagggatg tggaggcgca gctgcggcgg ctgcaggagg       480
agaggacgtg caaggtgtgc ctggaccgcg ccgtgtccat cgtctttgtg ccgtgcggcc       540
acctggtctg tggctgagtg tgccccggc ctgcagctgt gccccatctg gcagaagccc       600
ccgtcccgca gccgg                                                         615
```

```
        <210> 64
        <211> 839
```

28

<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(839)
<223> n = a,t,c or g

<400> 64
```
aagaatgtct ggaagagatg gaagaaaagg tttttgtat tggtgcaggt cattcagtac    60
acgtttgcca tgtgcagtta tcgggagaag aaagcggagc ctcaggaact tctacaattg   120
gatggctaca ctgtggatta caccgacccc cagccaggtt tggagggtgg ccgagccttc   180
ttcaatgctg tcaaggaggg agacaccgtg atatttgcca gtgacgatga acaagaccgc   240
atcctgtggg tccaggccat gtatcgggcc acggggcagt cacacaagcc tgtgcccccg   300
acccaagtcc agaaactcaa cgccaaggga ggaaatgtac ctcagctgga tgcccctatc   360
tctcaatttt acgcagatag agctcaaaaa catggcatgg atgaatttat ctcttccaac   420
ccctgtaact ttgaccacgc ttccctcttt gagatggtac aacgccttac tttggatcac   480
agacttaatg attcctattc ttgcctgggc tggttcagtc ctggccaggt gtttgtacta   540
gacgagtatt gcgcccgaaa tggagtccgg gggtgtcacc gacatctctg ctacctcaga   600
gacttgcttg aacgggcaga aaatggcgcc atgatcgacc ccacccttnt tcactacagc   660
tttgccttct gtgcatccca tgtccatggg aacaggcctg atggaattgg gaactgttga   720
ctgttgaaga aaaggaacgt tttttgaagg aaatcaaaag aggaggnttc cgnagttctg   780
ctaagaaaaa tcaggttaca acattttagg naattgcttt tcccatttgg gtcgaacct    839
```

<210> 65
<211> 1678
<212> DNA
<213> Homo sapiens

<400> 65
```
caagcagctg atcgtgctgg gaaacaaagt ggacctcctg ccccaggatg ctcctggcta    60
ccggcagagg ctgcgggagc gactgtggga ggactgtgcc cgcgccgggc tcctgctggc   120
ccctggccac caagggccac agcgccccgt caaggacgag ccacaggacg gggagaatcc   180
gaatccgccg aactggtccc gcacagtggt cagggacgtg cggctgatca gcgccaagac   240
cggctatgga gtggaagagt tgatctctgc ccttcagcgc tcctggcgct accgtgggga   300
cgtctactta gtgggcgcca ccaacgccgg caaatccact ctctttaaca cgctcctgga   360
gtccgattac tgcactgcca agggctccga ggccatcgac agagccacca tctccccttg   420
gccaggtact acattaaacc ttctgaagtt tcctatttgc aacccaactc cttacagaat   480
gtttaaaagg catcaaagac ttaaaaaaga ttcaactcaa gctgaagaag atcttagtga   540
gcaagaacaa aatcagctta atgtcctcaa aaagcatggt tatgtcgtag aagagttgg   600
aaggacattc ttgtattcag aagaacagaa ggataacatt ccctttgagt ttgatgctga   660
ttcacttgcc tttgacatgg aaaatgaccc tgttatgggt acacacaaat ccaccaaaca   720
agtagaattg actgcacaag atgtgaaaga tgcccactgg ttttatgaca cccctggaat   780
tacaaaagaa aattgtattt taaatcttct aacagaaaaa gaagtaaata ttgttttgcc   840
aacacagtcc attgttccaa gaacttttgt gcttaaacca ggaatggttc tgtttttggg   900
tgctataggc cgcatagatt cctgcagggg aaatcagtca gcttggttta cagtcgtggc   960
ttccaacatc ctccctgtgc atatcacctc cttggacagg cagacgctc tgtatcagaa   1020
gcatgcaggt catacgttac tccagattcc aatgggtgga aaagaacgaa tggcaggatt   1080
tcctcctctt gttgctgaag acattatgtt aaaagaagga ctggggcat ctgaagcagt   1140
ggccgacatc aagtttcct ctgcaggttg ggtttcagta acacctaatt ttaaggacag   1200
actgcatctc cgaggctata cacctgaagg aacagttttg accgtccggc ccctctctt   1260
gccatatatt gttaacatca aaggacagcg catcaagaaa agtgtggcct ataaaaccaa   1320
```

29

```
gaagcctcct  tcccttatgt  acaacgtgag  gaagaagaaa  ggaaagataa  atgtatgaga  1380
ccgaccttgt  tcactccaga  tattaactgt  attgaacaca  acaaaataca  ttgaatttgt  1440
attaaacata  taacgcataa  ataaagctcc  cattcttacc  cttaaaaata  aaaggagaat  1500
gaaaaaaaaa  gatgccaata  ggcatatacg  tggttttggg  tattccgggg  tcttcccgtg  1560
gtctgttcac  tttgcggtgg  tggtgatata  ttaggcagtc  ggggcgcctg  atgtacgcct  1620
tcttatagag  gtacatggtt  ggatgcagcg  tcttgacgtg  ggattcgctt  tattcgcc    1678
```

```
<210> 66
<211> 1888
<212> DNA
<213> Homo sapiens
```

```
<400> 66
tccacggtgg  catccatgat  gcatcgtcag  gagactgtgg  agtgtttgcg  caagttcaat  60
gcccggagaa  aactgaaggg  tgccatcctc  acgaccatgc  ttgtctccag  gaacttctca  120
gctgccaaaa  gcctattgaa  caagaagtcg  gatggcggtg  tcaagccaca  gagcaacaac  180
aaaacagtc   tcgtaagccc  agcccaagag  cccgcgccct  tgcagacggc  catggagcca  240
caaaccactg  tggtacacaa  cgctacagat  gggatcaagg  gctccacaga  gagctgcaac  300
accaccacag  aagatgagga  cctcaaagct  gccccgctcc  gcactgggaa  tggcagctcg  360
gtgcctgaag  acggagctc   ccgggacaga  acagccccct  ctgcaggcat  gcagccccag  420
ccttctctct  gctcctcagc  catgcgaaaa  caggagatca  ttaagattac  agaacagctg  480
attgaagcca  tcaacaatgg  ggactttgag  gcctacacga  agatttgtga  tccaggcctc  540
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tactttgaga  atctcctgtc  caagaacagc  aagcctatcc  ataccaccat  cctaaaccca  660
cacgtccacg  tgattgggga  ggacgcagcg  tgcatcgcct  acatccgcct  cacccagtac  720
atcgacgggc  agggtcggcc  ttcgaaccca  gccaagtcag  aagaagaccc  gggtctggca  780
cccgtcggga  atggcaagtg  gctcaatgtc  cactatcact  gctcagggc   ccctgcccg   840
caccgctgca  gtgagctcag  ccacaggggc  ttttaggaga  ttccagccgg  aggtccgaac  900
cttcgcagcc  agtggctctg  gagggcctga  gtgacagcgg  ccagtcctgt  ttgtttgaag  960
gtttaaaaca  attcaattac  aaaagcggca  agcagccaat  gcacgcccct  gcatgcagcc  1020
ctcccgcccg  ccttcgtgt   ctgtctctgc  tgtaccgagg  tgttttttac  atttaagaaa  1080
aaaaaaaag   aaaaaaagat  tgtttaaaaa  aaaaaggaat  ccataccatg  atgcgtttta  1140
aaaccaccga  cagcccttgg  gttggcaaga  aggcaggagt  atgtatgagg  tccatcctgg  1200
catgagcagt  ggctcaccca  ccggccttga  agaggtgagc  ttggcctctc  tggtccccat  1260
ggacttaggg  ggaccaggca  agaactctga  cagagctttg  ggggccgtga  tgtgattgca  1320
gctcctgagg  tggcctgctt  accccaggtc  taggaatgaa  cttctttgga  acttgcatag  1380
gcgcctagaa  tggggctgat  gagaacatcg  tgaccatcag  acctacttgg  gagagaacgc  1440
agagctccca  gcctgctgtg  gaggcagctg  agaagtggtg  gcctcaggac  tgagagcccg  1500
gacgttgctg  tactgtcttg  tttagtgtag  aagggaagag  aattggtgct  gcagaagtgt  1560
acccgccatg  aagccgatga  gaaacctcgt  gttagtctga  catgcactca  ctcatccatt  1620
tctataggat  gcacaatgca  tgtgggccct  aatattgagg  ccttatccct  gcagctagga  1680
gggggagggg  ttgttgctgc  tttgcttcgt  gttttcttct  aacctgggca  aggagagagc  1740
caggccctgg  gcaaggctcc  cgtgccgcct  ttgggttcct  tgtttttcttg  ttgcttgatc  1800
tggaccatct  ttgtctttgc  cttttcacgg  tagggtcccc  atgctgaccc  tcatcttggg  1860
cctgggcctc  ttgccaaagt  tgcccctg                                        1888
```

```
<210> 67
<211> 1712
<212> DNA
<213> Homo sapiens
```

30

<400> 67

```
ctttacccaa gaatgtggta ttcgtgcttg acagcagtgc ttctatggtg ggaaccaaac        60
tccggcagac caaggatgcc ctcttcacaa ttctccatga cctccgaccc caggaccgtt       120
tcagtatcat tggattttcc aaccggatca aagtatggaa ggaccacttg atatcagtca       180
ctccagacag catcagggat gggaaagtgt acattcacca tatgtcaccc actggaggca       240
cagacatcaa cggggccctg cagagggcca tcaggctcct caacaagtac gtggcccaca       300
gtggcattgg agaccggaga gtgtccctca tcgtcttcct gacggatggg aagcccacgg       360
tcggggagac gcacaccctc aagatcctca caacacccg agaggccgcc cgaggccaag        420
tctgcatctt caccattggc atcggcaacg acgtggactt caggctgctg agaaactgt        480
cgctggagaa ctgtggcctc acacggcgcg tgcacgagga ggaggacgca ggctcgcagc       540
tcatcgggtt ctacgatgaa atcaggaccc cgctcctctc tgacatccgc atcgattatc       600
cccccagctc agtggtgcag gccaccaaga ccctgttccc caactacttc aacggctcgg       660
agatcatcat tgcggggaag ctggtggaca ggaagctgga tcacctgcac gtggaggtca       720
ccgccagcaa cagtaagaaa ttcatcatcc tgaagacaga tgtgcctgtg cggcctcaga       780
aggcagggaa agatgtcaca ggaagcccca ggcctggagg cgatggagag ggggacacca       840
accacatcga gcgtctctgg agctacctca ccacaaagga gctgctgagc tcctggctgc       900
aaagtgacga tgaaccggag aaggagcggc tgcggcagcg ggcccaggcc ctggctgtga       960
gctaccgctt cctcactccc ttcacctcca tgaagctgag ggggccggtc ccacgcatgg      1020
atggcctgga ggaggcccac ggcatgtcgg ctgccatggg acccgaaccg gtggtgcaga      1080
gcgtgcgagg agctggcacg cagccaggac ctttgctcaa gaagccatac cagccaagaa      1140
ttaaaatctc taaaacatca gtggatggtg atccccactt tgttgtggat ttcccctga       1200
gcagactcac cgtgtgcttc aacattgatg ggcagcccgg ggacatcctc aggctggtct      1260
ctgatcacag ggactctggt gtcacagtga acggagagtt aattgggca cccgccctc        1320
caaatggcca caagaaacag cgcacttact tgcgcactat caccatcctc atcaacaagc      1380
cagagagatc ttatctcgag atcacaccga gcagagtcat cttggatggt ggggacagac      1440
tggtgctccc ctgcaaccag agtgtggtgg tggggagctg ggggctggag gtgtccgtgt      1500
ctgccaacgc caatgtcacc gtcaccatcc agggctccat agcctttgtc atcctcatcc      1560
acctctacaa aaagccggcg cccttccagc gacaccacct gggtttctac attgccaaca      1620
gcgagggcct ttccagcaac tgcagggtct tctgtgagtc tggcatcctg attcaggaac      1680
tgacccagca gtccgtggca gttgctggtc ga                                    1712
```

<210> 68
<211> 839
<212> DNA
<213> Homo sapiens

<400> 68

```
gttttttctc gagcaggtta gccaatatac ctttgctatg tgcagttata gagaaaagaa        60
gtctgaacca caagaattaa tgcagcttga aggctatact gtggattata ccgatcccca       120
cccaggcctt cagggtggtt gtatgttctt taatgctgtt aaagaaggag atactgtaat       180
ctttgccagt gatgatgaac aggacagaat attatgggtt caagccatgt atagggccac       240
aggtcaatca tataaaccag ttcctgcaat tcaaacccag aaactgaatc ctaaaggagg       300
aactctccat gcagatgctc agctttatgc agatcgtttt cagaaacatg gtatggatga       360
gtttatttct gcaaaccctt gcaagcttga tcatgccttc cttttagaa tactccagag        420
gcagactttg gatcacagac tgaatgattc ctattcttgc ttgggatggt ttagccctgg       480
ccaagtcttt gtgttagatg agtactgtgc ccgttatggt gtgagaggct gtcacagaca       540
tctctgctac cttgcagaac tgatggaaca ttcagaaaat ggtgctgtca ttgaccctac       600
cctgctccat tacagctttg cattctgtgc ctctcgatgt gcacggcaac aggcctgatg       660
gaattgggac tgtttcagtg gaagaaaaag aaagatttga ggagataaaa gagagactct       720
cttccctttt agaaaatcag ataagccatt tcagatactg tttttccttt ggacgacctg       780
aaggtgctct aaaagctaca ctttcattac ttgaaagggt tttaatgaaa gatattgcc        839
```

```
<210> 69
<211> 801
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(801)
<223> n = a,t,c or g
```

```
<400> 69
agacgggctg ctccatgagg tgctgaacgg gctcctagat cgccctgact gggaggaagc      60
tgtgaagatg cctgtgggca tcctcccctg cggctcgggc aacgcgctgg ccggagcagt     120
gaaccagcac gggggatttg agccagccct gggcctcgac ctgttgctca actgctcact     180
gttgctgtgc cggggtggtg gccacccact ggacctgctc tccgtgacgc tggcctcggg     240
ctcccgctgt ttctccttcc tgtctgtggc ctggggcttc gtgtcagatg tggatatcca     300
gagcgagcgc ttcagggcct tgggcagtgc ccgcttcaca ctgggcacgg tgctgggcct     360
cgccacactg cacacctacc gcggacgcct ctcctacctc cccgccactg tggaacctgc     420
ctcgcccacc cctgcccata gcctgcctcg tgccaagtcg gagctgaccc taacccccaga    480
cccagccccg cccatggccc actcacccct gcatcgttct gtgtctgacc tgcctcttcc     540
cctgccccag cctgccctgg cctctcctgg ctcgccagaa ccccctgccca tcctgtccct    600
caacggtggg ggcccagagc tggctgggga ctggggtggg gctggggatg ctccactgtc     660
cccggaccca cagctgtctt cacctcctgg ctctcccaag gcagctctac actcacccgt     720
ctaaaaaaag gcccccgtaa ttcccccga catgnnnccc cgctctagag gatcaagcaa      780
ctacgcggcg gctcacgacg c                                               801
```

```
<210> 70
<211> 531
<212> DNA
<213> Homo sapiens
```

```
<400> 70
agaagggtgt cccaaccttg ctcatggcag ctggcagctt ctatgacatt ctggccatca      60
ctggcttcaa cacatgcttg ggcatagcct tttccacagg ctctactgtc tttaatgtcc     120
tcagaggagt tttggaggtg gtaattggtg tggcaactgg atctgttctt ggatttttca     180
ttcagtactt tccaagccgt gaccaggaca aacttgtgtg taagagaaca ttccttgtgt     240
tggggttgtc tgtgctagct gtgttcagca gtgtgcattt tggtttccct ggatcaggag     300
gactgtgcac gttggtcatg gctttccttg caggcatggg atggaccagc gaaaaggcag     360
aggttgaaaa gataattgca gttgcctggg acattttttca gccccttctt tttggactaa    420
ttggggagcag aggtatctat ttgcatctct cagaccagaa actgtaggcc tttgtgttgc    480
caccgtaggc atttgcagta ttgatacgaa tttttgacta cattttctga a              531
```

```
<210> 71
<211> 540
<212> DNA
```

32

<213> Homo sapiens

<400> 71

```
tgtgcgagga attcgaatca ggtaatggag aggactggca tgaagggggc acaggactgt         60
gaaaacctga gtgattctgt ccttccctca tcctctatcc ctgaaccagg gcagacatag        120
atggaatcag agcaggagtt ggtgttgatg tggtttcagg tccacctatc agagtttgag        180
agatttaggc catgaaccat tatgaatata gatgagaacc tttgtaattg ctgaaggagg        240
tagtagtgca ggcaagtcct gtgtgcaaga cctgctgctc ccagttagta cggacccctg        300
tgacattcac agaagttcag aatgtctgag atgctctgca ggctacctta tctccgtctg        360
cagctacacc tccagtgatc acaatcagtg ctacgctggc acagccagcc tggccctgct        420
ctggattgga ggcatcctca agggctgctt gctgtggaag cagtttcgct ggaccgagag        480
gagccactgg aattttgggt actgggcctt atggtcaccc gggaatggga atggctgctg        540
```

<210> 72
<211> 428
<212> DNA
<213> Homo sapiens

<400> 72

```
cggacgcgtc cgcccacgcg tccgcccacg cgtccgctag aaatttctgt ggaactccat         60
ttgactttct atctgtgaaa tccaaactgt ctctgaagaa ataagaaaaa tagtgttttg        120
acttttagga gacaactatg tttattattt tgccttgcaa attaatgtct aaatttgtac        180
aagcacctat ctacagattt ttccaggtaa accatcatgt tttatgtgta aaggtagatt        240
gatgtgcatt tactttatac tttggtactt aggccattac acatctttgc actggaattg        300
gtgcagatat ataagtgatc ctaatgttga tgctgcccag accccaggaa tgcagaggtg        360
agcatgacac acacagtccc tgccctgatg gagctcatag actagtgaag gaatagggct        420
ctatgacc                                                                 428
```

<210> 73
<211> 584
<212> DNA
<213> Homo sapiens

<400> 73

```
gctggagtca ttgcctggtt tcaaagagat tgtgagcagg ggagtaaaag tggattactt         60
gactccagac ttccctagtc tctcgtatcc caattattat accctaatga ctggccgcca        120
ttgtgaagtc catcagatga tcgggaacta catgtgggac cccaccacca caagtcctt        180
tgacattggc gtcaacaaag acagcctaat gcctctctgg tggaatggat cagaacctct        240
gtgggtcact ctgaccaagg ccaaaaggaa ggtctacatg tactactggc caggctgtga        300
ggttgagatt ctgggtgtca gacccaccta ctgcctagaa tataaaaatg tcccaacgga        360
tatcaatttt gccaatgcag tcagcgatgc tcttgactcc ttcaagagtg gccgggccga        420
cctggcagcc atataccatg agcgcattga cgtggaaggc caccactacg ggcctgcatc        480
tccgcagagg aaagatgccc tcaaggctgg tagacactgt cctgaagtac atgaccaagt        540
ggatccagga gcggggcctg caggaccgcc tgaacgtcat tatt                         584
```

33

```
       <210> 74
       <211> 348
       <212> DNA
       <213> Homo sapiens




       <400> 74
ggcacgagat tttcatccaa aacaaacact ggacttcctg cggagtgaca tggctaattc      60
gaaaatcaca gaagaggtga aaaggagtat agcacaacag tatctagatt tgacagtagc     120
ccggaacaag tggaccctga tgccgaagtc gatgcagccc catctaccac atcttcatgt     180
ggacattgag attcacacgc tggctcctga agggtgctca gtctccttgg tgattaaggt     240
cctgcttgaa ctggtgccaa ctccatggca gggaagttgc tttttggttgc ctggctgggt     300
ttcccagatc ccttctgggg caaggagcta tcagaccctg cttttcaag               348




       <210> 75
       <211> 365
       <212> DNA
       <213> Homo sapiens




       <400> 75
caagcaaagt ggggatgtca cctgcaactg cactgatggg cgcttggccc ccagctgcct      60
gacctgcgtc ggccactgca ttttttggcgg ctactgtacc atgaacagca aaatgatgcc     120
tgaatgccag agcccacccc acatgacagg gccccggtgt gaggagcacg tcttcagcca     180
gcatcagcca ggacatataa cctccatcct aatccctatg ctgtagctgc tgctgctggt     240
tctggtggcc ggagtgatat tctgccataa acggcgagtc caaggggcta agggcttcca     300
gcaccaacgg atgaccaacg gggccatgaa cgcgcagatt gcaaacccca cctacaagat     360
gtacc                                                                365




       <210> 76
       <211> 700
       <212> DNA
       <213> Homo sapiens




       <400> 76
caagaaccat cagcaccaac acaaatgtat ctttgcagac cgaaggaatc agctaaacaa      60
tttacagtca tctcaatctc tactaaaaca aaaatcacat ccaacatgcc acctgacacc     120
atttcttttct ctctctctct tttgctcctt gcgatgaggc attcatctct ccttgagcct     180
ccgttctgaa gagataacag tatagcaaca actctgccac tgaaatcctg ttctctgacc     240
gatattggca cctgcaaaga gaaacaacca gtaacaggca gcagcagcat cagtattaat     300
cttccatgat gaaatctta caggtcaaga acaagtacac agctctttc tcactccttc     360
```

```
acagtggacc atgcaactag ttgaggtgga agacaatgga ttgtctacaa gcctttgaa      420
cagtggagaa tgcagggcgt tggctttagg aagaggcaga aatccaggca gaacttgaac      480
gtttggaaag agtcagaaat cttcacatac gtgagctgaa aagaataaac aatgaagata      540
attcacagtt caaagatcac ccaacattaa atgaaagata tttattactt catctgcttg      600
gtagaggtgg ctttagtgaa gtgtataagg taatgtatgg tttattctgg ttttttttaca   .  660
ctaatgtagc aaggatatag gagtatgtgg ttaagaagtg                    .      700
```

<210> 77
<211> 426
<212> DNA
<213> Homo sapiens

<400> 77
```
ttgcctagca catggcaggg tgcagcgcct gtctgaatgt gtgaagagtt cttagtgatg       60
ggtaaagggt gttcctgtgt gttttagatt ctgctcagca atcctcagat gtggtggtta      120
aatgattcca atcctgaaac cgacaaccgt caagaaagtc cttcccagga aaacattgac      180
cgagtgagtg acaggccttt gtgccctcag cttggacagc ctcgggtggg gttgcttggg      240
gtaacctggg tgaatcaggc agcaggactg ggggagtccg tgctgaaacc ttggctccca      300
ggctccaggt gtaacctgcc cacctcagag gccacccacg cagtaacaga gggcagggga      360
ggcctccttg gaaagcagga aaactgggga agtgtcagga agttctcttt aggtttgctg      420
cctttg                                                                426
```

<210> 78
<211> 358
<212> DNA
<213> Homo sapiens

<400> 78
```
tttcgtgcta tgttcttggc tgttcaacac gactgcagac ccatggacaa gagcgcaggc       60
agtggccaca agagcgagga gaagcgagaa aagatgaaac ggaccctttt aaaagattgg      120
aagacccgtt tgagctactt cttacaaaat tcctctactc ctgggaagcc caaaaccggc      180
aaaaaaagca aacagcaagc tttcatcaag taagttgaga atcctgagct tgcaaatatc      240
aatagttagc tgctgaactg aaaaggggaa ctctgatgag cgtaagctaa catacagaac      300
ctctcttgca ggccttctcc tgaggaagca cagctgtggt cagaagcatt tgacgagg       358
```

<210> 79
<211> 322
<212> DNA
<213> Homo sapiens

```
       <400> 79
gggttttttca attttttccag cccaaagtta aaaggttgga aaatcaattc ctctttggtc      60
ctagagataa ggaagaacat acttcgtttc ttagatgcag aacgagatgt gtcagtggtc      120
aagagcagtt ttccaagcaa agacgccaga cactccagtg tgcaccggta gttcacccaa      180
ctgcattggg gaccgccctc tcatactcca gccaggccgt gacgtgaccg acctccgact      240
tctgcgcaaa ggcagcgcaa gccgttggga tcccctgctc ccctcgctc aacagtcggg       300
ccattacacc tttcatactg cg                                              322
```

```
         \
       <210> 80
       <211> 310
       <212> DNA
       <213> Homo sapiens
```

```
       <400> 80
cgaaagcacg ccagaaaaca aaataaaagc aatacataac cacaaaaata atagcgtata      60
gatgatcaac aagaattaaa acgcgtaaca tagtatagtc aaaaagaata cacgaaaaag      120
aaactccata aaaaatgcaa tatcatacag gcagatatca agccagacaa tatcctggat      180
aatgaatcca taactattct aaagcttagc gattttgggt cggcttcaca tgttgcggat      240
aatgacataa caccttcatc ttctcagacc acatccgctg catcatcgcc cccgcggacg      300
ctacgccgcg                                                            310
```

```
       <210> 81
       <211> 134
       <212> DNA
       <213> Homo sapiens
```

```
       <400> 81
tcgagtaaac catgggacta aagcttggct ccaaagcatt caggctgaac gaaaaacatg      60
gactgctatt gcataatacc aacgtgcatt ggacgagaac gatgctatgg aacctgcata      120
ggcgacacgg tcgg                                                       134.
```

```
       <210> 82
       <211> 358
       <212> DNA
       <213> Homo sapiens
```

```
       <400> 82
ctctgggaga gaaagactaa tgggcaggat cccattactt cattggtaaa gatagtcgga      60
tactctcacc actttttaata ccttttagtat tacagttgat cagattacct ttacttgata    120
tgaattattt ctaagttcat tcccctgtgt tgtagcttat ttcaacaatt ccaactagcc      180
```

36

```
gtttaaaatt cctcaaagaa actggtcatg gaacaccaat ggaagaaata cctgaggagg    240
aattatcaga ggatgttgaa cagattgatc acgctgatag ggagttgcgg cgtggccaaa    300
acttgaggtg caaaggaatt catagattgc ctactcatat acaagtaggg caaaatcg      358
```

```
        <210> 83
        <211> 723
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 83
tacacacaca cacacacaca cacacacact cactctctca gaggagagaa aatattaaga    60
atcgtgtatt ttacacaggt atccaaacat aaaaatactt tagaattgct tactgtatgg    120
acaggttata tggaatggag tttgtagtat ccacattaac aaagcaagtt tatatggact    180
ggttatgata ttagggatat gaattagaaa tggatgttgt tgcactcatt taaaatattt    240
tgcctctcac tttatcccca gttatagtgt ccttttgaat ttttctcaca cagtgctact    300
atatttcatg aactggtata taaacaaacc aaaattattt cttcaaatca agaacttatc    360
tacgaagggc gacgcttagt cttagaacct ggaaggctgg cacaacattt ccctaaaact    420
actgaggaaa accctatatt tgtagtaagc cgggaacctc tgaataccat aggattaata    480
tatgaaaaaa tttccctccc taaagtacat ccacgttatg atttagacgg ggatgctagc    540
atggctaagg caataacagg ggttgtgtgt tatgcctgca gaattgccag taccttactg    600
ctttatcagg aattaatgcg aaaggggata cgatggctga ttgaattaat taaagatgat    660
tacaatgaaa ctgttcacaa aaagacagaa gttgtgatca cattgggatt tctggtatcc    720
aga                                                                  723
```

```
        <210> 84
        <211> 407
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 84
ggcacgagga aaatgggacc caccgtctct cccatctgcc taccaggcac ctggggcgac    60
tacaacctca tggatgggga cctgggactg atctcaggct ggggccgaac agagaagaga    120
gatcgtgctg atcgcctcaa ggcggggagg tcacccgcag ctgggtaaag aaaatgggaa    180
cccgggagag gggaccctac gtgggaagaa tcagaggaag atgtacataa gagtaagtgg    240
acaagatgtg tggatgagaa gggcgcgtag tgctaaacag acaataagag accgctcagg    300
tgtggggtga cctaatgggg agacgtggaa tatgtttggt ggcacggagg aaagtctaat    360
ggatatcgtg tttaggagga cgatggagtc ttacgtgctc gttgatg                  407
```

```
        <210> 85
        <211> 342
        <212> DNA
        <213> Homo sapiens
```

37

<400> 85

```
ggcacgagct cgaaaattta atcaagagtg cgcactctta ttccctttac tgagggtaat      60
atctacacgg agcctagaca gccgaaccag aggcttcctt ttgtccaaga agaggatgga     120
atagacaagc tggagctgct ggctcccgga tgaatttcag acctggggtt ctcagctcca     180
ggcaacttgg actcccagga cctcctgacg gtcctgacta tactgtttac tacccgttcc     240
atcgacttgc catggtgact gctgcctcac gattggagcg tgaacacctt acgcatctat     300
gacactaggg atacaatgga gaggtataga gcaaccctag cg                        342
```


<210> 86
<211> 420
<212> DNA
<213> Homo sapiens

<400> 86

```
cgctccgcag gtttagcacc gactgtagct ctgatcagca ggaccgatta aacggaactg      60
cccctagcgg ttttaaccgc tcctgaccag tcccgttgcc gcaccccatc ttggaagtat     120
gccctggcca gtaggagcca caaagcgcga ttagcctcac tgcatttcag gtacaggccg     180
gcgccagccg tgcctcacca ggtccaccgg ctccgagcag cagcaagccc ggtcggaaag     240
cgaaagtggc ctcgccatgt ccagaccggc cagctccccc gcctacctga ccccgccccg     300
cagccgcacc tgggtccgag tcatcgccgc ggccgccacg gccccgcaca ggaaggcggc     360
agcaaagagc gcacgctcga cgcgctgcag ccaggacagc gccatggcgc ccctcgtgcc     420
```


<210> 87
<211> 392
<212> DNA
<213> Homo sapiens

<400> 87

```
ggcacgaggg gagaaggcgg ggctgggcct cagcttccca aaggtttttg aggaactggg      60
cttttctgac accctcaaag gtcagaaggt taaaggggca gaaggcattc ggaaagctcc     120
cctcccacag tgacacctct ctgacttctg acctagggtt ccaccaccgc ttcaatccca     180
atgcctccag ctccttcaag cccagtggga ccaagtttgc cattcagtat ggaactgggc     240
gggtagatgg aatcctgagt gaggacaagc tgactgtgag tggcctttga ctccaggaag     300
cctcgagcct gggagaaccc tgttgtctaa gatcatctgg cttagggagg ggcttgaggt     360
gcaggggctt cctgagccga tggatggggc tt                                   392
```


<210> 88
<211> 332
<212> DNA
<213> Homo sapiens

```
        <400> 88
gggaggaata taatgcatta cccaaatggt catgccatat gtattgcaaa tggacattgt        60
atcatcttgt gaaatagtca taacattaaa gtttgggtat agtagttagc atattttcat       120
ggccagtatt gatgctattt ttttcccttac ctatcagact ctttcaaaga gaaaagaggg      180
agcagttgga attttatgtt tgttgttcta ttttgtctat tatgaattgt gacaaaacca       240
ttataaaaga tgacaagtgt gtgtgtttct ttttttcttt ttaaactgta gggaacatag       300
tcattagtga tctcaaatac cgaaagacat tt                                     332
```

```
        <210> 89
        <211> 535
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 89
attaacctag gaaatacatg ttatatgaac agtgttattt aagccttgtt tatggccaca        60
gatttcagga gacaagtatt atctttaaat ctaaatgggt gcaattcatt aatgaaaaaa       120
ttacagcatc tttttgcctt tctggcccat acacagaggg aagcatacgc acctcggata       180
ttctttgagg cttccagacc tccatggttt actcccagat cacagcaaga ctgttctgaa       240
tacctcagat ttctccttga caggctccat gaagaagaaa agatcttgaa agttcaggcc       300
tcacacaagc cttctgaaat tctggaatgc agtgaaactt ctttacagga agtagctagt       360
aaagcagcag tactaacaga gacccctcgt acaagtgacg gtgagaagac tttaatagaa       420
aaaatgtttg gaggaaaact acgaactcac atacgttgtt tgaactgcac gagtacctca       480
caaaaagtgg aagcctttac agatctttcg cttgcctttt ggccttcctc ttctg           535
```

```
        <210> 90
        <211> 432
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 90
gcccgggacg acccacgcgt acgactcagt ttaagtccaa actttctaat aatttgatgt        60
agcagcgtaa tgggctgcat tactagtgag ttccttatgt gagtgtgcga gcatatgctg       120
gatgacttat ctagaataat gtagaagaga attaaacatt gaatgggagc ttaaattagt       180
taatttctga ggttcccttc cattcttaga attctttgat ttttatattg aattgagaga       240
actagtatag ttttttatttc agcaaattat aacaccattg ttctcaaggc atggaaaatg      300
tgcttttcat ctttaagata ctaaaccttt tcactcatgg caatttttttt tagctagcct      360
ctaagcttgg aaagcagtgg accccattaa taatcctggc caactctctt agtggaacta       420
atatgggaga ag                                                           432
```

```
        <210> 91
```

```
<211> 780
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(780)
<223> n = a,t,c or g
```

```
<400> 91
ccatgcatag gattaaactg aatgatcgaa tgacatttcc cgaggaacta gatatgagta    60
cttttattga tgttgaagat gagaaatctc ctcagactga aagttgcact gacagtggag   120
cagaaaatga aggtagttgt cacagtgatc agatgagcaa cgatttctcc aatgatgatg   180
gtgttgatga aggaatctgt cttgaaacca atagtggaac tgaaaagatc tcaaaatctg   240
gacttgaaaa gaattccttg atctatgaac ttttctctgt tatggttcat tctgggagcg   300
ctgctggtgg tcattattat gcatgtataa agtcattcag tgatgagcag tggtacagct   360
tcaatgatca acatgtcagc aggataacac aagaggacat taagaaaaca catggtggat   420
cttcaggaag cagaggatat tattctagtg ctttcgcaag ttccacaaat gcatatatgc   480
tgatctatag actgaaggat ccagccagaa atgcaaaatt tctagaagtg gatgaatacc   540
cagaacatat taaaaacttg gtgcagaaag agagagagtt ggaagaacaa gaaaagagac   600
aacgagaaat tgagcgcaat acatgcaaga taaaattatt ctgtttgcat cctacaaaac   660
aagtaatgat ggaaaantaa attgaggttc ataaggataa gacattaaag gaagcagtag   720
aaatggctta taagatgatg gatttagaag aggtaatacc cctggattgc tgtcgccttg   780
```

```
<210> 92
<211> 867
<212> DNA
<213> Homo sapiens
```

```
<400> 92
ctcagtcatg ccagtgcctg ctctgtgcct gctctgggcc ctggcaatgg tgacccggcc    60
tgcctcagcg gcccccatgg gcggcccaga actggcacag catgaggagc tgacccctgct   120
cttccatggg accctgcagc tgggccaggc cctcaacggt gtgtacagga ccacggaggg   180
acggctgaca aaggccagga acagcctggg tctctatggc cgcacaatag aactcctggg   240
gcaggaggtc agccggggcc gggatgcagc ccaggaactt cgggcaagcc tgttggagac   300
tcagatggag gaggatattc tgcagctgca ggcagaggcc acagctgagg tgctgggggga   360
ggtggcccag gcacagaagg tgctacggga cagcgtgcag cggctagaag tccagctgag   420
gagcgcctgg ctgggccctg cctaccgaga atttgaggtc ttaaaggctc acgctgacaa   480
gcagagccac atcctatggg ccctcacagg ccacgtgcag cggcagaggc gggagatggt   540
ggcacagcag catcggctgc gacagatcca ggagagactc cacacagcgg cgctcccagc   600
ctgaatctgc ctggatggaa ctgaggacca atcatgctgc aaggaacact tccacgcccc   660
gtgaggcccc tgtgcaggga ggagctgcct gttcactggg atcagccagg gcgccgggcc   720
ccacttttga gcacagagca gagacagacg caggcgggga caaaggcaga ggatgtagcc   780
ccattgggga ggggtggagg aaggacatgt acccttcat gcccacacac ccctcattaa   840
agcagagtca aggcatctca aaaaaaa                                       867
```

```
<210> 93
<211> 690
```

```
<212> DNA
<213> Homo sapiens
```

```
<400> 93
tcggaaccgc cctgaattac ctctgtcgac ccacgcgtcc ggggaaacgc ttctacagga        60
tatggaaaaa tttggctcga tgatgtttcc tgtgatggag atgagtcaga tctctggtca       120
tgcaggaaca gtgggtgggg aaataatgac tgcagtcaca gtgaagatgt tggagtgatc       180
tgttctgatg catcggatat ggagctgagg cttgtgggtg gaagcagcag gtgtgctgga       240
aaagttgagg tgaatgtcca gggtgccgtg ggaattctgt gtgctaatgg ctggggaatg       300
aacattgctg aagttgtttg caggcaactt gaatgtgggt ctgcaatcag ggtctccaga       360
gagcctcatt tcacagaaag aacattacac atcttaatgt ccaattctgg ctgcgctgga       420
ggggaagcct ctctctggga ttgtatacga tgggagtgga aacagactgc gtgtcattta       480
aatatggaag caagtttgat ctgctcagcc cacaggcagc ccaggctggt tggagctgat       540
atgccctgct ctggacgtgt tgaagtgaaa catgcacaca catggcgctc tgtctgtgat       600
tctgatttct ctcttcatgc tgccaatgtg ctgtgcagag aattaaactg tggagatgcc       660
atatctcttt ctgtgggaga tcactttggg                                        690
```

```
<210> 94
<211> 948
<212> DNA
<213> Homo sapiens
```

```
<400> 94
cgagtggcga ggttcatcat ggaggcagac ggagtctcgc tctgttggcc aggctggagt        60
gcaggggcgt gatctcggct cactgcaacc tccgtctccc ggactaaagc aattatcctt       120
cctcacgctt ccgagtagct ggaattacag gtgtcaagct agggatgcgg tccattccca       180
ttgccactgc ttgcaccatt taccataagt tcttttgcga gaccaacctg gacgcctatg       240
acccttacct gattgccatg tcttcaattt acttggccgg caaagtggaa gagcagcacc       300
tgcggactcg tgacatcatc aatgtgtcca acaggtactt taacccaagc ggtgagcccc       360
tggaattgga ctcccgcttc tgggaactcc gggacagcat cgtgcagtgt gagcttctca       420
tgctgagagt tctgcgcttc caggtctcct tccagcatcc acacaagtac ctgctccact       480
acctggtttc cctccagaac tggctgaacc gccacagctg gcagcggacc cctgttgccg       540
tcaccgcctg ggccctgctg cgggacagct accatggggc gctgtgcctc cgcttccagg       600
cccagcacat cgccgtggcg gtgctctacc tggccctgca ggtctacgga gttgaggtgc       660
ccgccgaggt cgaggctgag aagccgttgg gtggcagatt tatgccatgg acacagagat       720
cccctaaggt cctggcccag gcctgcccaa agagaagcca catctgcgtt tgtcctttga       780
gaggactttg actacaatac aggcatgaca tcaatgaaag gaaagtcatg aaatcgatga       840
gactgaatcc ctacggattt cttaaaagcc agatttgtag ggagaatgaa tgtgcaacgt       900
ggctgaaatc tattttgtgt aataaaaggt gatacaagtc aaaaaaaa                     948
```

```
<210> 95
<211> 541
<212> DNA
<213> Homo sapiens
```

<400> 95

```
ttagtttata aagaaaagac atttaattgg ctcatagttc tgcaggctgt acaggaagca        60
tagtagcttc tgcttctggg gaggcctcag gaaacttaca atcacagcag aaggtgaagg       120
ggaagcaggc acgccgtaca tggctgggct ttcggcctcc tcttcatcaa caaggagtcg       180
gtggtcatgg cctatctctt caccaccttc aacgccttcc aggggggtctt catcttcgtc     240
tttcactgcg ccttacagaa gaaggtgagg tcgaggcggg gtcctgggtc acagcctccc       300
ttggagacgt ttcctgggta cccaggagaa ggcggcgagg gtggagggga ctcaggggct       360
ccctcaagcc cccagtgagt gctgcagggc ttctgtggtc aggtctgcgt cccccgggag       420
gggagcacga gctcaggggtt agggagggtt taaccacggg tgaagagggt tctgttgaca     480
gacgctgagg ccgcaaacgc tcctcctctc tcttcacact cgccaacacc gcggtggcgc       540
t                                                                       541
```

<210> 96
<211> 603
<212> DNA
<213> Homo sapiens

<400> 96

```
cagcccgtaa ggatgatcta cctccaaata tgagattcca tgaggagaag aggctggact        60
ttgaatggac actgaaggca gggtgagaaa aaggctagcc ctcgaagtga ataagggct       120
gggagggcca agaatgatga tagacggtga gggactgagg gatcagctga tgagttaagc       180
ctcaacacct gtcctagggc tttgcagatg cccctcaaac gtgtttacac cctcctgagc       240
tcctggaact gcctagaaga ctttgatcag atcttctggg gccagaagag tgccctggct       300
ggtcagtggt tccccgaggt ctccataatc ccttaatggc ccctctggat gactcatcac       360
actccacagt cccccgtaac tctttgcaag aagagacctt atcatatctg gtcaactcag       420
agaggccttg agaatgaaaa cgcagaagct gggttcaggg agggttatat acctgaaccc       480
ctggggtaga ttttggagaa gggatatgca ggctgtggta catatatcct cctttcaccg       540
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gcc                                                                     603
```

<210> 97
<211> 1385
<212> DNA
<213> Homo sapiens

<400> 97

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tctttcagca aggtggggggc aagcagaatg cctcccagga tttcacacct gagccctgcc      60
ccaccctgct gagaaaacac tccgccacgt gaagagacag aggaggatgg caggagttac       120
ctcgggaaac aaacaggatc ttctctgccc tgctccagtc gagttggcct gacccgcttg       180
gatcagtgac catttgctgg cagacagggg agagcagctt ccagcctggg tcagaagggg       240
tgggcgagcc cctcggcccc tcaccctcca ggctgctgtg agagtgtcaa gtgtgtaagg       300
gcccaaactc aggttcagtg cagaaccagg tcagcaggta tgcccgcccg tacgttaagg       360
gggccctcta aaccccttgc ctggcctcac ctggccagct caccccttttt gggtgtaggg      420
gaaaagaatg cctgaccctg ggaaggctcc ctggtagaat acaccacact tttcaggttg       480
ttgcaacaca ggtcctgagt tgacctctgg ttcagccaag gaccaaagaa ggtgtgtaag       540
tgaagtggtt ctcagtcccc agacatgtgc cccctttgctg ctggctacca ctcttcccca     600
gagcagcagg cccccgagccc cttcaggccc agcactgccc cagactcgct ggcactcagt      660
```

42

```
tccctcatct gtaaaggtga agggtgatgc aggatatgcc tgacaggaac agtctgtgga    720
tggacatgat cagtgctaag gaaagcagca gagagagacg ctccggcgcc ccagccccac    780
tatcagtgtc cagcgtgctg gttccccaga gcacagctca gcatcacact gacactcacc    840
ctgccctgcc cctggccaga gggtactgcc gacggcactt tgcactctga tgacctcaaa    900
gcactttcat ggctgccctc tggcagggca gggcagggca gtgacactgt aggagcatag    960
caagccagga gatggggtga agggacacag tcttgagctg tccacatgca tgtgactcct   1020
caaacctctt ccagatttct ctaagaatag caccccttc cccattgccc cagcttagcc   1080
tcttctccca ggggagctac tcaggactca cgtagcatta aatcagctgt gaatcgtcag   1140
ggggtgtctg ctagcctcaa cctcctgggg caggggacgc cgagactccg tgggagaagc   1200
tcattcccac atcttgccaa gacagccttt gtccagctgt ccacattgag tcagactgct   1260
cccggggaga gagcccccggc ccccagcaca taaagaactg cagccttggt actgcagagt   1320
ctgggttgta gagaactctt tgtaagcaat aaagtttggg gtgatgacaa atgttaaaaa   1380
aaaaa                                                                1385
```

```
        <210> 98
        <211> 2191
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 98
accaccaccc gtgcgggggg atatctgagc catttctctg tgggcttttg tttttcaaag     60
actgggcagg ttgttgttga ggtgtgtgtg ggctgccacg attttgtgga agtataatac    120
tttgtcatta tgagatgtcg tctctcggtg cctcctttgt gcaaattaaa tttgatgact    180
tgcagttttt tgaaaactgc ggtggaggaa gttttgggag tgtttatcga gccaaatgga    240
tatcacagga caaggaggtg gctgtaaaga agctcctcaa aatagagaaa gaggcagaaa    300
tactcagtgt cctcagtcac agaaacatca tccagtttta tggagtaatt cttgaacctc    360
ccaactatgg cattgtcaca gaatatgctt ctctgggatc actctatgat tacattaaca    420
gtaacagaag tgaggagatg gatatggatc acattatgac ctgggccact gatgtagcca    480
aaggaatgca ttatttacat atggaggctc ctgtcaaggt gattcacaga gacctcaagt    540
caagaaacgt tgttatagct gctgatggag tattgaagat ctgtgacttt ggtgcctctc    600
ggttccataa ccatacaaca cacatgtcct tggttggaac tttcccatgg atggctccag    660
aagttatcca gagtctccct gtgtcagaaa cttgtgacac atattcctat ggtgtggttc    720
tctgggagat gctaacaagg gaggtcccct ttaaaggttt ggaaggatta caagtagctt    780
ggcttgtagt ggaaaaaaac gagagattaa ccattccaag cagttgcccc agaagttttg    840
ctgaactgtt acatcagtgt tgggaagctg atgccaagaa acggccatca ttcaagcaaa    900
tcatttcaat cctggagtcc atgtcaaatg acacgagcct tcctgacaag tgtaactcat    960
tcctacacaa caaggcggag tggaggtgcg aaattgaggc aactcttgag aggctaaaga   1020
aactagagcg tgatctcagc tttaaggagc aggagcttaa agaacgagaa agacgtttaa   1080
agatgtggga gcaaaagctg acagagcagt ccaacacccc gcttctcttg cctcttgctg   1140
caagaatgtc tgaggagtct tactttgaat ctaaaacaga ggagtcaaac agtgcagaga   1200
tgtcatgtca gatcacagca acaagtaacg gggagggcca tggcatgaac ccaagtctgc   1260
aggccatgat gctgatgggc tttggggata tcttctcaat gaacaaagca ggagctgtga   1320
tgcattctgg gatgcagata aacatgcaag ccaagcagaa ttcttccaaa accacatcta   1380
agagaaggggg gaagaaagtc aacatggctc tggggttcag tgattttgac ttgtcagaag   1440
gtgacgatga tgatgatgat gacggtgagg aggagtataa tgacatggat aatagtgaat   1500
gaaagcagaa agcaaagtaa taaaatcaca aatgtttgga aaacacaaaa gtaacttgtt   1560
tatctcagtc tgtacaaaaa cagtaaggag gcagaaagcc aagcactgca tttttaggcc   1620
aatcacattt acatgaccgt aatttcttat caattctact tttatttttg cttacagaaa   1680
aacggggggga gaattaagcc aaagaagtat atttatgaat cagcaaatgt ggtgcctgat   1740
tatagaaatt tgtgatccta tatacaatat aggacttta aagttgtgac attctggctt   1800
tttctttta tgaatacttt ttagtttgta tttgactta tttcctttat tcaaatcatt   1860
tttaaaaact tacattttga acaaacactc ttaactccta attgttcttt gacacgtagt   1920
aattctgtga catactttt ttttcttata gcaatacact gtaatatcag aaatggttgg   1980
cctgagcaac ctagtaagac ctcgtctcta ctaataatta aaaaactagc tggcatggta   2040
gcacacacct gtagtcccag atacttggga ggccaaggca ggaggattgc ttgagaccta   2100
gcaatcagtc agggctgcag tgagccatga tggcaccact gcactctagc ctgggcaaga   2160
```

gaacaagatc ctgtctcaaa aaacagggaa a   2191

        <210> 99
        <211> 335
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(335)
        <223> n = a,t,c or g

        <400> 99
ggcacgaggc tgaacttcag gtggatgatg agacaaaata gaccgatagg aatcgtctgg   60
ctatatactc cttgttgcca ctgctgagtg actagactgg cccagagatc cgcggtgcac   120
atgctggccg ctcctccctc agaaaaaggc aatggcctaa atactgttta aatgacctga   180
ctcgatgctg tgggaaactg gctgctctgc tgcatgccgt gtgactgtca gtccaaccgt   240
tacatttgcc acgttctcca cacggggggat agacgcaatg cgcccaggtc ccagtttttct   300
ttggaggcag cagctctcgc agggctgaat gttgn   335

        <210> 100
        <211> 348
        <212> DNA
        <213> Homo sapiens

        <400> 100
cctactctgg gggatcaacc agatcttcat tccataactc gtgcttctcg tcctaaatta   60
tgtactagaa aaaattgtaa tcctcttact ataactgtcc atgaccctaa ttcaactcag   120
tagtattatg gcatgtcatg ggaattaaga tttttatatcc caggatttga tgttgggact   180
atgttcacca tccaaaaaat cctggtctca tggagcccac ccaagccaat cgggccttta   240
actgatctag gtgaccctat gttccagaaa cccccctaaca aagttgattt aactgttcct   300
ccaccattct tagtcataaa agatacactc caaaagttcg agaaaatc   348

        <210> 101
        <211> 416
        <212> DNA
        <213> Homo sapiens

        <400> 101
agcctcaata atgtaacact gccccaagcg aaaacagaaa aagatttcat ccaactctgc   60

44

```
acccctgggg taattaagca agagaaactg ggcacagttt actgtcaggc aagctctcct      120
ggagcaaata tgattggtaa taaaatgtct gccatttctg ttcacggtgt gagtacctct      180
ggaggacaga tgtaccacta tgacatgaat acagcatccc tttctcaaca gtaggatcag      240
aagcctattt ttaatgtcat cccaccaatt cccgttggtt ctgaaaattg gaataggtgt      300
caaggatctg gagatgacaa cttgacttcc ttggggactc tgaatttccc tggtcgaacg      360
gtttcttttt cttttgagat ggagtctcgc tctgtcgccc aggctggagt gcagtg         416
```

```
        <210> 102
        <211> 352
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 102
acgcgtccga caaaaacaac aacagatggg gaaactgaaa gtgcatagca caaaatgcgg      60
actaattctg aaatcaccaa tatgtatctg tgcttgggaa atagaggcat acacaggaat     120
gcagatgccc acacactcac attcacactc acactcactc tcacactcac tctcacactc     180
actctcactc gcactctcac actacaccga gatgctcaca cactcagcct ccccatgccc     240
aggcccctgc tctttgttaa tcataagaag accgtggaca acccacctgg aaactatgtg     300
cccacagacc cagactgaag gtgataaaag agggtggctg gcttgggggc tg             352
```

```
        <210> 103
        <211> 702
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 103
aaagcaggtg cctggaaaag cctgctgagg gtgaagggga accatccagt gtcctgggtt      60
ggggaagcat tttcctcttt atgagtctgt ctctggtcct catggaacaa aagtgggcag     120
tggtggtatg agaagcagag gctaattgtc tacccctgc ctccaagtag aattactcct      180
tgtctgtgta cctggtgagg cagttgactg caggaaccct tctacaaaaa ctcagagcaa     240
agggtatccg gaacccagac cactcgcggg cactgagtga gtaacatctt tcctctcttc     300
cccacctgat ctggattcaa gtcttcctgg ccctccagcc ttcataatta aacccatacc     360
tcttttttga caacttactc cccttctcac atgaacccca accctccccc tctacccctg     420
accagtcttc cagtctttat agttgaagtt ggaccactcc caggcaccct tgaatttcca     480
atcatgtatc tgctttgcac ctcacagtcc ctaactccag ccctgctaga atatgggctc     540
tccggactgg aaagaatctt aggggtcctc taatctaacc ctcacatgat gcttcaactc     600
ctccagatca tctctaacat agccagagtg tcacgctatg tttaagcatc ttcagggatg     660
ggaaaatccc ccacacccat gtattgcggc cgctctagag ga                       702
```

```
        <210> 104
        <211> 689
        <212> DNA
        <213> Homo sapiens
```

45

<400> 104

```
ggcaacatac  attgtggact  ttggcttcag  tacaacattc  agagaggggc  agatgctgac     60
agctttttgt  ggcatgtacc  cctacgtggc  cccagaacgc  tccctgggcc  aggcatgcca    120
gtgacccgcc  agggacatac  aaagcctcag  tgtcatactg  tatttcagga  atacagtagg    180
tagaagggcc  aggactttgc  ccttttactc  agggaagcct  ccaaacttca  agaaaaaatt    240
ctcacaggaa  gatatcatgc  cccaccactt  cttgcccttc  aacttgactc  attaaaaaat    300
tactaatgct  gaacgccagg  aagtgtcctt  cactgtaact  gatgaaaaat  ccatgggtga    360
aaagtagcca  gaagatgcca  ctgataccat  acgaagagcc  actcctggac  caccccaaac    420
aatccagctc  atggtggcca  tgggatttca  ggccaagaac  atctctgtgg  caatcataga    480
aagaaaattc  aactatccca  tggccaccta  cctcatttta  gagcacacaa  aacaagagag    540
gaagtgctcc  accatcagag  aactgtccct  tcctcccggg  gttcccacct  ctccttcccc    600
atccactgaa  ctttccacct  tccctctctc  actgatgcgg  gctcataggg  agccagcttt    660
taacgttcag  cctcccgaag  aaagccagg                                         689
```

<210> 105
<211> 776
<212> DNA
<213> Homo sapiens

<400> 105

```
agcaaagcag  gagctggcca  agctgatgcg  gattgaggac  ccctccctcc  tgaacagcag     60
agtcttgctg  caccacgcca  aagctggcac  catcattgcc  cgccagggag  accaggacgt    120
gagcctgcac  ttcgtgctct  ggggctgcct  gcacgtgtac  cagcgcatga  tcgacaaggc    180
ggaggacgtg  tgcctgttcg  tagcgcagcc  cggggaactg  gtggggcagc  tggcggtgct    240
cactggcgaa  cctctcatct  tcacactgcg  agcccaacgc  gactgcacct  tcctgcggat    300
ctccaagtcc  gacttctatg  agatcatgcg  cgcacagccc  agtgtggtgc  tgagtgcggc    360
gcacacggtg  gcagccagga  tgtcgccctt  cgtgcgccag  atggacttcg  ccatcgactg    420
gactgcagtg  gaggcgggac  gcgcgctgta  caggtgcagc  tcccaccgcg  ctgctcaggc    480
ccggcctagg  ggtgggggacc  tgggggtggt  cagaccttgc  tgacctccac  gcccactcag    540
gcagggcgac  cgctccgact  gcacttacat  cgtgctcaat  gggcggctgc  gtagcgtgat    600
ccagcgaggc  agtggcaaga  aggagctggt  gggcgagtac  ggccgcggcg  acctcatcgg    660
cgtggtgagc  gcgaccccca  cccactgacc  tctggccttt  tccaggccag  tccctcggca    720
actcacacgc  atcatcccgg  gtaatccagg  gagtggtgaa  gtttttcccg  gggctc        776
```

<210> 106
<211> 707
<212> DNA
<213> Homo sapiens

<400> 106

```
cccacgcgtc  cggatggacc  ccaggaacca  cccagacctt  aggacagggg  acagcatggg     60
acacagttgc  ttccactcca  ggaaccagcg  agactacagc  ttcagctgag  ggaagacgaa    120
ccccaggagc  aaccaggcca  gcagctccag  ggacaggcag  ctggcagag  ggttctgtca    180
aagcacctgc  tccgattcca  gagagtccac  cttcaaagag  cagaagcatg  tccaatacaa    240
```

```
cagaaggtgt ttgggagggc accagaagct cggtgacaaa cagggctaga gccagcaagg    300
acaggaggga gatgacaact accaaggctg ataggccaag ggaggacata gaggggggtca   360
ggatagctct tgatgcagcc aaaaaggtcc taggaaccat tgggccacca gctctggtct    420
cagaaacttt ggcctgggaa atcctcccac aagcaacgcc agtttctaag caacaatctc    480
agggttccat tggagaaaca actccagctg caggcatgtg gaccttggga actccagctg    540
cagatgtgtg gatcttggga actccagctg cagatgtgtg gaccagcatg gaggcagcat    600
ctggggaagg aagcgctgca ggggacctag atgctgccac tggagacaga ggtccccaag    660
caacactgag ccagaccccg gcagtatgac cctggggacc ccctggg                  707
```

```
<210> 107
<211> 485
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(485)
<223> n = a,t,c or g
```

```
<400> 107
ccgctggaac atcaggtact ggggacactg gccctggtaa cacagcagtc tcaggcacac     60
ctgtggtatc acctggagca actcctggag ctccaggtag cagcacccct ggggaagcag    120
acattggaaa caccagtttt ggaaaatcag ggaccccaac agtatctgct gcctcaacta    180
ccagtagccc tgtgagtaaa cacaccgatg cagcctcagc cacagcagtg acaatctctg    240
gaagcaaacc aggtacacct ggaacaccag gtggtgcaac tagtggaggc aaaattacac    300
ctggaattgc atgacccacc ctggaccaaa agagccctg cttctccggg tatggaggtt      360
atttccctgt aaatcctcac cagaacccat gtgctgattc cctgtaatct tcccacaata    420
aatttttagc agctctgnnn nnnnnnnnn ggggcgccc gttttaaggg acccacctt       480
actcg                                                                485
```

```
<210> 108
<211> 565
<212> DNA
<213> Homo sapiens
```

```
<400> 108
cgggctcacc gctgctgtct cccgctccca agtctttctt gtgaaatcca aattggattc     60
tcttgatctt ccatctttcc agggcagtga gcttgtcctt gttcctgctg cagaagttgt    120
agaaggaact ggcctcagag cccacgctgt cctcatcatc ctcccgcacc ctgctccctg    180
cttctgagct cctgtctgcc gcctcctctc tcttgctctt ggcgtggtac ctccgggaag    240
cctccttctc aatctccagc agcctctcgt tccatcgtc ccaggtgctc tccgaggaca     300
tcgagtctgc gcggcgcctc ctgccgtggt ccggcgggtt cagctccagc tgctgcttca    360
ggaccagat gtcgtggctg ctcacgctct cccaggcgct gctctcgctc agggtgcgcc     420
gccgcctccc caccgaggag ccagcgtcgc tctcctcctc tttctcctcc tcccttcccc    480
acctccggta cccttctgct aaaaacctct cgtttcggct ctgccactcg tgaatgatcc    540
tctccacgtc ctcgtcctcg acccg                                          565
```

```
        <210> 109
        <211> 986
        <212> DNA
        <213> Homo sapiens




        <400> 109
ggatgacgtg ccgcccccgg ctcctgacct ctacgacgtg ccccctggct tgcggcggcc      60
tggcccgggc accctgtacg atgtgccccg tgaacgggtg cttcctcctg aggtggctga     120
tggtggcgtg gtcgacagtg gtgtgtatgc ggtgcctccc ccagctgaac gtgaagcccc     180
ggcagagggc aagcgcctgt cggcctccag caccggcagc acacgcagca gccagtctgc     240
gtcctccttg gaggtggcag ggccgggccg ggaacccctg gagctggaag ttgctgtgga     300
ggccctggca cggctgcagc agggtgtgag cgccaccgtt gcccaccttc tggacctggc     360
aggcagcgcc ggtgcgactg ggagctggcg tagcccctct gagccacagg agccgctggt     420
gcaggacctg caggctgctg tggccgccgt ccagagtgcc gtccacgagc tgttggagtt     480
tgcccgcagc gcggtgggca atgctgccca cacatctgac cgtgccctgc atgccaagct     540
tagccggcag ctgcagaaga tggaggacgt gcaccagacg ctggtggcac atggtcaggc     600
cctcgacgct ggccggggag gctctggagc caccccttgag gacctggacc ggctggtggc     660
ctgctcgcgg gctgtgcccg aggacgccaa gcagctggcc tccttcctgc acggcaatgc     720
ctcactgctc ttcagacgga ccaaggccac tgccccgggg cctgaggggg gtggcaccct     780
gcaccccaac cccactgaca agaccagcag catccagtca cgacccctgc cctcaccccc     840
taagttcacc tcccaggact cgccagatgg gcagtacgag aacagcgagg ggggctggat     900
ggaggactat gactacgtcc accttacagg gggaaggagg agtttttaga agacccagaa     960
ggagcttctg ggaaaaaggg cagcat                                          986




        <210> 110
        <211> 414
        <212> DNA
        <213> Homo sapiens




        <400> 110
cgaagggaaa gcagcaggtt ggggcttctt gtggccaact tcagagcctg tcaccaggaa      60
aggtaagcat gggaggaagg aagatggcga cagatgaaga aaatgtctat ggtttagaag     120
agaacgctca gtcccggcag gagtccacgc ggaggctcat ccttgttggg agaacagggg     180
ccgggaagag cgccactggg aacagcatcc tggccagag acggttcttc tccaggctgg      240
gggccacgtc tgtgaccagg gcctgcacca cgggcagccg caggtgggac aagtgccacg     300
tggaagtcgt ggacactccg gacattttca gctcccaagt gtccaagaca gatcctggct     360
gtgaggagag aggtcactgc tacctgctct cggcccccgg accccacgcg ctgg           414




        <210> 111
        <211> 419
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
```

```
<222> (1)...(419)
<223> n = a,t,c or g
```

```
<400> 111
gactctcggg ttacgttcac taacgaagga gggcggtggt gggggtgatg tggcggcctt      60
tgaggttggc acaggggctg cggccagccg ggcgctgggg cagtgcgggc agctccagaa     120
gctcatcgtc atcttcattg gcagcctgtg cgggctgtgc accaagtgcg ctgtgtccaa     180
cgacctcacc cagcaggaga tacagacccc ggagatacaa cagagaaatg cataatgtcc     240
agtcaattta ttaaagttcc aaagtnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn     300
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnatttcaa tatgattaaa gcaggagtga     360
ggacacagcg aaagtgagac aaggaaaaga gaacaaaata aaacaggaga gacagaata      419
```

```
<210> 112
<211> 1191
<212> DNA
<213> Homo sapiens
```

```
<400> 112
gtgcaaggtg ctgtcactca cgtgtgccct cgaccctccc gttcacccgc agccttctca      60
gcgcctctcc ctgggccgga ggcctcctca ccagcctacc tgttgctctg gaaaaaaatc     120
ccgtcccccg actccgtccc taccccccagt cttcggccgg ctctggcccc tggggagggg     180
gctgcacggt ggaaggaggc tggctatggg cccggctgcc cgctgcatgt acctcctcct     240
ccacccatcg cctcttgcct gggggtaact ttgcctgggg ctcattcttt ggttaagctg     300
aagctgccgt gggtggccaa accgcagatt ctttgcaaat tctgagctgg cagagctcgc     360
agccgggagc cggccgggga agaggagact tgcgcgccgc aagccgcctg cctccaccct     420
gctctccatc tcccgctcta gaagggctgg gaagctcgcg gccggggttc cacctggaag     480
ctgcttgcat ggctgaaccc agcttaggtc cctgacgggg ctgctggtgg aattctcccc     540
cttcgaagct ggggaggttt aggaggggga aggcttctgt gaagctctca aaccactaat     600
agagcccct ccccaacagt gacggcgcag atgctccccc ttttcttagt tgacaccacc     660
aggcagcttc ctggccgttg gtaggttcct gcagctggct gagggaacag ggaccggcag     720
gggactttgt taggggaggg ttgggatggg cagtgggccc ctgaaagtta atatattgga     780
acctagctcg agtgtcgttc tttccaattc cgaaagtaga aagagtaaaa ataggggtga     840
ttggggtggg gttagtagaa tgcctctctc agggcgctcc cccctccccc accgttttag     900
agagctaggc ctcagccagt cttgccactc ccatctcagt gcttcctgaa gaggctgttt     960
tgagtgttga tgaaaagcaa tgcaattatg ccaaacagta ttgagcagaa taatttattt    1020
ctttttttc ttttgcttta aatcatgaat cccgccaggt acggtggctc acgcctgtca    1080
tcccagcact ttgggaggcc aaggcgggcg gattacttaa tacttaaggt caggagttcg    1140
agaccagcct ggccgatatg gtgaaacctc gtctctacca aaaaaaaaa a             1191
```

```
<210> 113
<211> 1240
<212> DNA
<213> Homo sapiens
```

```
<220>
<221> misc_feature
<222> (1)...(1240)
<223> n = a,t,c or g
```

49

```
<400> 113
agaacacgaa ctagtgtctc taagccacta taatagttgc acatacaaca tgagtgtggt      60
gtggtaggat gctttttcctt ttaggtcttt actgaacttt caagggatta aaaccaatgt    120
atgtcaactt tatagcaaaa gattcagatt ctaatcctga ataccaatgc atttttagagg    180
gggaaaaaat gagggatgta aaatatatat agtagggtaa gagtttttgcc tttgaacaat    240
gtgcatattc tattttaatt tggaatgttt tatacttgca tttcatgtta tgtagttttt      300
ggactggact gtgtttttcc acaaaatgaa aaatcaacta ttttgccacc ttattattca      360
acctacctgc ccatagttgt ctatgccagt tactaatcta tttaaattta ataaatcaaa      420
agctgtcctt agggattggc caagagtcgt aagtccttca gcctgaaggt ttttcaattc      480
attcataaac gttgcatggt tttctttcca tccagccttg atagcatagg gcggctcttc      540
gaaagtgacc agcatatacc tgtctcctct gctggcaggg tcccgggcac ggagcttcat      600
gaaggtctct accgcgcctt tggccgtgtc caggtaggtg gtgcccagat ggctgcgctg      660
gttcatagag gcagacgtgt ctatcaggaa cagtaagatg ggcatagtgc tggccggga      720
caccggggcc cgaggtggtg gagaaagagg agatggtaga ggtggaggcg ccggtggcgg      780
cgaccgccgc tagcggggcg ggggagcacg gcccccggga ggaaaacact gtctgggtct      840
ttcctccggc tgcggggaat tcctcccccg atagttgaga ggaaactccc cagacccagt      900
gctccccgtc gtaccnccgc ctccgcctcc tcctgcctgc ctgcccgctg gggcgggcgc      960
ccagccgtct gtctgtcggt tcgtcccccc cgcctcgggg gtcccgtccc cgctcccggc     1020
ccctgtgtgt gtcccagcgg gagacgggcc tggctcccca ccccacccccc ggtacaggag     1080
tggggacctg ggagctggcg aagaggggag tgggctgagg gaagattggc cctggggctg     1140
ttgggagaag tttcagggac tccctccgca caccggcggt gtcaccactt tctcagcccc     1200
tctcgcggac gcgtgggtcg cgccggggtt ccgcaggca                            1240
```

```
<210> 114
<211> 810
<212> DNA
<213> Homo sapiens
```

```
<400> 114
aatagaattc cgtcggcaca cgcacgcgta cctaggatcg tatagagcgg ccgcaataca      60
tgccgtcttc ttaaatcaac tcctctctct caaaaagcct ttctttccgt gtcgcgaata     120
tcatccctcc ggtcctgtcc cgcagcgagt tccccggcgt tgggcttctc tattatgccg      180
gccagcggag tccaattggt ctgacttcac tgtccggaga atcctctcgc tcccaaacct      240
ccctgagaga cgacctttaa ccgtgccagc cggacctgcc tacaaagacc ctcctcttca      300
acctgtcccc tgtgttactc cacaaaacgg acacagaagt tcgtcaacct gcccagatac      360
cacgcctcaa agcggcaaca gagccgaacc cctttctcag gcttcggacg gcccagaccc      420
ggcatctctt ttctcctctt ccccagaccc ttccacctct ggcctccgag agccccagcc      480
tcagttcccc tccaggccct aggaaccctg ctctccagca gtacagtctg tagaccccccg      540
aatcagttcc ccactcaacc tcagaactcc tctggcgccg actggcccca ctcgggcaaa      600
ggatggcggt ggataggatg acccgaacca ccagagccag caaacttacc ccagccgcca      660
tggtgattcc gcaaagaaag ggggtggggt tctcggcgct gccgcaaagt aagcccgccc      720
gggagagaag ggaggggggaa agaggagagc cgtggagaaa cagcagccga aaaacgagga     780
cgaaacagaa gacatacgta cgacagttcg                                      810
```

```
<210> 115
<211> 320
<212> DNA
```

<213> Homo sapiens

<400> 115
caagagcacg atgctgaagc actggagagt ggggctctgg ggtcagtgct ggatcagagg   60
caagaggagg tgatgatgcg gccctgtcct gagtgacacc aacccctccc cagtactaca   120
cctgcagctg tgtcctgggc ttcattgcct gctccatctt cttgcagatg agcctgaagc   180
caaaggtcat gctgctgaca gtggccctgg tggcctgtct cgtgctcttc aacctctccc   240
agtgctggca gcgggactgc tgcagccaag gcctgggcaa cctcactgag cccagtggca   300
ccaacaggta gggccccgcc   320

<210> 116
<211> 456
<212> DNA
<213> Homo sapiens

<400> 116
ggcaaggcag gcggcgcggc cggcctcttc gccaagcagg tgcagaagaa gtttagcagg   60
gcccaggaga agtagacaag gcggtttggg aagacatgtc agccagaaga aagagcgagg   120
gaagaaagac aagaaggacc tgagatagag tttgggtttt ccttttttc tctctctctt   180
tattaagccc aacctgcctt ctacaacgga gaagttttgg ttttctaaga gctgatggac   240
ttagaagcat ttggatgaac agctctgctt accaactgaa atatccctat tatcttctaa   300
aagtggagca ctgctttgag ccctgggaag gcttaaaggc aaccagctct cccgagttga   360
tttatcagca gaaaactgat ggaatgtaga tgtagctcct gactttaaga gaccacaatg   420
gaagggaggt tattttctat catttgaggt catgtg   456

<210> 117
<211> 2398
<212> DNA
<213> Homo sapiens

<400> 117
cccacgcgtc cggtcagcct cagtcttcaa tgagggaccc cgtacagagt aacccaaacg   60
cttgttccta tttcaggatg tgaacactct gcaaggaggt gggcagcctg tggtgactcc   120
gtccgtccag ccctctcttc agccggccca tccagcgtta ccacagatga cctcacaggc   180
acctcagcca tctgttactg ggctccaggc accttctgct gccttaatgc aagtgtcatc   240
tctcgattcc cactcagctg tatctggaaa tgcccaatcc tttcagccct atgcaggtat   300
gcaagcctac gcttatcccc aggcatctgc cgtcacctcc cagctgcagc ccgttcggcc   360
tttgtaccca gcaccgctct ctcagcctcc ccatttccaa ggatcaggtg atatggcttc   420
atttctcatg actgaagccc ggcaacataa cactgaaatt cgaatggcag tcagcaaagt   480
ggctgataaa atggatcatc tcatgactaa ggttgaagag ttacagaaac atagtgctgg   540
caattccatg cttattccta gcatgtcagt tacaatggaa acaagcatga ttatgagcaa   600
catccagcga atcattcagg aaaatgaaag attgaagcaa gagatccttg aaaagagcaa   660
tcggatagaa gaacagaatg acaagattag tgaactaatt gaacgaaatc agaggtatgt   720
tgagcagagt aacctgatga tggagaagag gaacaactca cttcagacag ccacagaaaa   780

51

```
cacacaggca agagtattgc atgctgaaca agagaaggcc aaggtgacag aggagttagc    840
agcggccact gcacaggtct ctcatctgca gctgaaaatg actgctcacc aaaaaaagga    900
aacagagctg cagatgcagc tgacagaaag cctgaaggag acagatcttc tcaggggcca    960
gctcaccaaa gtgcaggcaa agctctcaga gctccaagaa acctctgagc aagcacagtc   1020
caaattcaaa agtgaaaagc agaaccggaa acaactggaa ctcaaggtga catccctgga   1080
ggaggaactg actgaccttc gagttgagaa ggagtccttg gaaaagaacc tctcagaaag   1140
gaaaaagaag tcagctcaag agcgttctca ggccgaggag gagatagatg aaattcgcaa   1200
gtcataccag gaggaattgg acaaacttcg acagctcttg aaaaagactc gagtgtccac   1260
agaccaagca gctgcagagc agctgtcttt agtacaggct gagctacaga cccagtggga   1320
agcaaaatgt gaacatttgt tggcctccgc caaggatgag cacctgcagc agtaccagga   1380
ggtgtgcgca cagagagatg cctaccagca gaagctggta caacttcagg aaaagtctgt   1440
ttgttttgca gtgtttagcc ctccaggccc aaatcacagc tctcaccaag caaaatgaac   1500
agcacatcaa ggaactagag aagaacaagt cccagatgtc tggggttgaa gctgctgcat   1560
ctgacccctc agagaaggtc aagaagatca tgaaccaggt gttccagtcc ttacggagag   1620
agtttgagct ggaggaatct tacaatggca ggaccattct gggaaccatc atgaatacga   1680
tcaagatggt gactcttcag ctgttaaacc aacaggagca agagaaggaa gagagcagca   1740
gtgaagaaga agaagaaaaa gcagaagagc ggccacgaag accttcccag gagcagtcag   1800
cctcagccag ttctgggcag cctcaagcac ccctgaatag ggagaggcca gagtccccca   1860
tggtgccctc agagcaggtg gtcgaggaag ctgtcccgtt gcctcctcag gccctcacca   1920
cttcccagga tggacacaga aggaaagggg actcagaagc tgaggcactc tcagagataa   1980
aagatggttc ccttccaccc gaactgtctt gcatcccatc ccacagagtt ctagggcccc   2040
cgacttcaat tccacctgag cccctaggcc ctgtatccat ggactctgag tgtgaggagt   2100
cacttgctgc cagcccaatg gcagctaaag cccgacaacc catcagggaa aggtctgtgt   2160
tcaggggaag taggcaccag atgggcccac ttacaaggaa aggttccaca agattgttcc   2220
ctggatttca ggaccccgag ggaggggggac ccactggcct tagggcttga aaagcccagg   2280
gagagcctca gcctccacag cttcaaggaa aggttgatgt tcactaggtt ccaccggttc   2340
cccacaaggg agctttttcaa gaacaggagg gcaggtttcc acagttttgc agggagca     2398
```

<210> 118
<211> 800
<212> DNA
<213> Homo sapiens

<400> 118
```
agcgaaacgg cgcagcaaat tatcgaccgt ctgcgcgtaa aactggcgaa agaaccgggg     60
gcgaatctgt tcctgatggc ggtacaggat attcgcgttg gtgggcgtca gtcgaacgcc    120
agctaccagt acacgttgtt atccgacgac ctggcggcac tgcgagaatg ggagccgaaa    180
atccgcaaaa aactggcgac gttgccggaa ctggcggacg tgaactccga tcagcaggat    240
aacggcgcgg agatgaatct ggtttacgac cgcgacacca tggcacggct gggaatcgac    300
gtacaagccg ccaacagtct gttaaataac gccttcggtc agcggcaaat ctcgaccatt    360
taccagccga tgaaccagta taaagtggtg atggaagtgg atccgcgcta tacccaggac    420
atcagtgcgc tggaaaaaat gttcgttatc aataacgaag gcaaagcgat cccgctgtca    480
tatttcgcta aatggcaacc ggcgaatgcc ccactatcgg tgaatcatca gggattatcg    540
gcggccttga ccatttcgtt taacctgccg accggaaaat cgctctcgga cgccagtgcg    600
gcgatcgatc gcgcaatgag ccagcttggt gtgccttcga cggtgcgcgg cagttttgcc    660
ggcccggcgc aggtgttcca ggagaccatg aactcgcagg tgatcctgat tattgccgcc    720
atcgccacgg tgtatatcgt gctgggaatc ccttacgaga ggtacgtaca tccgccgacg    780
attctcttgt gaaggccgcc                                                800
```

<210> 119
<211> 427
<212> DNA

<213> Homo sapiens

<400> 119
aaatcatcac acctgatgcg atgggttgcc agaaagatat tgcagagaag atacaaaaac   60
agggaggtga ttatttattc gctgtaaaag gaaaccaggg gcggcttaat aaagcctttg   120
aggaaaaatt tccgctgaaa gaattaaata atccagagca tgacagttac gcaatcagtg   180
aaaagagtca cggcagagaa gaaatccgtc ttcatattgt ttgcgatgtc cctgatgaac   240
ttattgattt cacgtttgaa tggaaagggc tgaagaaatt atgcgtggca gtctcctttc   300
ggtccataat agcagaacaa aagaaagagc cagaaatgac ggtcagatac aatatcagtt   360
agttgggtat cgccggggat atatcagtca cagcgatctc cgggacggac gattgaatct   420
cgtaatc   427

<210> 120
<211> 378
<212> DNA
<213> Homo sapiens

<400> 120
ccattatttg aaaatgctca ctcaggcgcg gcgggaagtg attatcgcca acgcctactt   60
cttccccggc tatcgatttt tacacgcctt gcgtaaagcg gcacggcgcg gggtgcggat   120
caaactgatc attcagggcg aaccggatat gccgattgtc agagtcggtg cgcgcttgct   180
gtataactat ctggttaaag gcggcgttca ggttttttgag taccgccgcc gcccgctcca   240
cggcaaagtg gcattgatgg acgatcactg ggcgacagta gggtccagta atctccatcc   300
ggtcagttag tcggggaatc tccaagcaaa tgtcatcctc cacgttctac gggtaccgac   360
attgaatccg taatcatg   378

<210> 121
<211> 508
<212> DNA
<213> Homo sapiens

<400> 121
ctgccgcctg gtgaagttta cgccccatcg aagccctggc aaaagaagtc cgtgaactga   60
aataacatac tcgttaattg ctcaatccag ccacaacgcg agaactgacc agtctgggac   120
gaaacctgaa ccgattgtta aaaagtgaac gcgaacgtta cgacaaatac cgtacgacgc   180
tcaccgacct gacccatagt ctgaaaacgc cactggcggt gctgcaaagt acgctgcgtt   240
ctctgcgtag tgaaaagatg agcgtcagtg atgctgagcc ggtaatgctg gagcaaatca   300
gccgcatttc acagcaaatt ggctactacc tgcatcgtgc cagtatgcgc ggcgggacat   360
tgctcagccg cgagctgcat ccggtcgccc cactgctgga caatctcacc tcagcgctga   420
tcaaaggcaa gccgcgtaaa gggggcaacg tcactgtttt tccattcaca gcgatgtaca   480
gggacggaca ttgaatccgt gatcagtg   508

53

```
        <210> 122
        <211> 724
        <212> DNA
        <213> Homo sapiens




        <400> 122
gggtaacact gtgatgtttc agcacctgat gcagaagcgg aagcacaccc agtggacgta      60
tggaccactg acctcgactc tctatgacct cacagagatc gactcctcag gggatgagca     120
gtccctgctg gaacttatca tcaccaccaa gaagcgggag gctcgccaga tcctggacca     180
gacgccggtg aaggagctgg tgagcctcaa gtggaagcgg tacgggcggc cgtacttctg     240
catgctgggt gccatatatc tgctgtacat catctgcttc accatgtgct gcatctaccg     300
ccccctcaag cccaggacca ataaccgcac gagcccccgg gacaacaccc tcttacagca     360
gaagctactt caggaagcct acatgacccc taaggacgat atccggctgg tcggggagct     420
ggtgactgtc attggggcta tcatcatcct gctggtagag gttccagaca tcttcagaat     480
gggggtcact cgcttctttg gacagaccat ccttgggggc ccattccatg tcctcatcat     540
cacctatgcc ttcatggtgc tggtgaccat ggtgatgcgg ctcatcagtg ccagcgggga     600
ggtggtaccc atgtcctttg cactcgtgct gggctggtgc aacgtcatgt acttcgcccg     660
aggattccag atgctaggcc ccttcaccat catgattcag aagatgattt ttggcgacct     720
gatg                                                                  724




        <210> 123
        <211> 435
        <212> DNA
        <213> Homo sapiens




        <400> 123
gagaaagcag cagctgccaa catagatgaa gtgcagaagt cagatgtatc ctctacaggg      60
cagggtgtca tcgacaagga tgcgctgggg cctatgatgc ttgaggtagc acatcttcat     120
tttagtgctg tattttaaaa tcttgttgat cttcacatta ttacatttaa tttcaggtga     180
atataattta aggagaatcc acactagtac tagtactatg gacctcttga gcttgctgat     240
atgcctgtgt gtctctatgt atgttttggc tcctgctgcc agtatatgtg tgtttgaaat     300
taacatagaa ttaaattaac tagattagag tagacattgg caagttgtaa ttgccagttg     360
agcatttatt tgaaaaactg tattcacaag tcctactaaa ttctgtgttg attttagctt     420
gaaatgttct caaaa                                                      435




        <210> 124
        <211> 363
        <212> DNA
        <213> Homo sapiens




        <400> 124
actggaagtg ccttcagagg tcaccccttt gggctttgcc atgcaggcta caaagactct      60
```

```
cctcctcaga acatgctgct tgcaggaatt caacatcatg gaaaagaata aaggatgggc    120
tctcctggga ggaaaagatg gccatcttca gggactattt ctccttgcca acgcattgct    180
ggaaagaaat cagctccttg cacagaaggt catgtactta ttagtccctc ttcttaaccg    240
agggaatgat aaacataaac tcacatctgc aggctttttt gtggagcttc tccggagtcc    300
agtggccaag agactgccca gcatatactc tgttgcccgc tttaaagact ggctacaaga    360
tgg                                                                  363
```

```
<210> 125
<211> 373
<212> DNA
<213> Homo sapiens
```

```
<400> 125
agaccggccc ccgctccctc agctgcgccg gaggaggcgc ccagtcctcg gggtgaaggg    60
tcggggatg gcgaagcgaa gagtgcccgc tccggtgtgg gggggagcag gaggagggac    120
gaagtccgcc cgccgcgccg ccgccgcgcc tgacaccgag cggagcgagg aaggaggacg    180
agcggtgaag gaagcctacc cttccagccg tcagccgccg ccgccgtcgc cgtgaccccct   240
gcgttgcgcc cggcgctgcc acccgaactt agccccctcg atgccaattt caaatagga    300
aggaaaaggg aaaagaaggg aagagaaaat ccggccgctg agtcccgcgt ccactcacac    360
ctccgctcgt gcc                                                      373
```

```
<210> 126
<211> 362
<212> DNA
<213> Homo sapiens
```

```
<400> 126
gcctacaggg ggtccatggc agcagttcta ctttctgcag ctccctaagc agtgactttg    60
accccctaga gtactgcagc cctaaagggg atccccagcg agtggacatg cagcctagtg    120
tgacctctcg gcctcgttcc ttggactcgg aggtgcccac aggggaaacc caggtttcca    180
gccatgtcca ctaccaccgc caccggcacc accactacaa aaagcggttc cagaggcatg    240
gcaggaagcc tggcccagaa accggagtcc cccagtccag gcctcctatt cctcggacac    300
agccccagcc agagccacct tctcctgatc agcaagtcac cagatccaac tcagcagccc    360
ct                                                                  362
```

```
<210> 127
<211> 351
<212> DNA
<213> Homo sapiens
```

<400> 127

```
catggctgac cccgacccc  ggtaccctcg ctcctcgatc gaggacgact tcaactatgg     60
cagcagcgag gcctccgaca ccgtgcacat tcgaatggcc tttctgagaa gagtctacag    120
cattctatct ctgcaggatc tcttagctac tgtgacttcg acagataatt tagcctttga    180
ggatggacgg actgactggc tgcaaaggcc tgactgtgtc tccttcaaaa ttcatgtgct    240
gccaatgtga cggtattaag aggaggggcc ttagaggggg attagatcct gaaaggtcct    300
tactttttgg agtgacgagg atgcatacga tgaaagcatc tcgtagatac g             351
```

<210> 128
<211> 374
<212> DNA
<213> Homo sapiens

<400> 128

```
gaactcccca aaggcaccat ccaggttttt accccgcttg tcaaattccc ctctggccca     60
gggctggctg ctcagcagga gtgtttaata agcacttaat tgcccggtga gtacagacca    120
ttccagctca ccttaactgt ttcctggctg actcgcctct cggcctgatt gccctgctca    180
tctggctgag tgagctggaa tgagtgtagt ggtagtgcca cctataggtt cctcttacct    240
tggtcttatt tcacaggagc acttcccgaa cgagtttacc tcgggagatg gaaagaaagc    300
tcaccaggac tttggctact tttatggctc gagctatgtg gcagcctctg acagcagccg    360
gactcctggg ctgt                                                      374
```

<210> 129
<211> 392
<212> DNA
<213> Homo sapiens

<400> 129

```
taccaccacg cccagcccca acatatgact ttctgtgtgt tttccaagag tctagtgtga     60
ggtcagaggt cagacaggtc atcaggaatt ttgcttcaag tgagttgctg ctgccctgac    120
tcttttcccc cagcaattaa gtccccccgg ggcttggggg ttgggtttgt cagcttgctt    180
ttgctgtgct gagggcttct ccagactgaa tcagcaggtc ctcagctcat ctctgctcct    240
tctctctagg accaactgcc cctgtaagta cagttttttg dataacctca agaagttgac    300
tcctcgacgc gatgttccca cttaccccaa ggtaagatga gattccggcc cagaagaagc    360
tgcagctgtg tccccagccc cacgccgagc cc                                  392
```

<210> 130
<211> 359
<212> DNA
<213> Homo sapiens

56

<400> 130
```
ccgggacgat gcctgcctct actccccagc ctcagctccc gaggtcatca cagtaggggc    60
caccaatgcc caggaccagc cggtgaccct ggggactttg gggaccaact ttggccgctg   120
tgtggacctc tttgccccag gggaggacat cattggagcc tccagcgact gcagcacctg   180
ctttgtgtca cagagtggga catcacaggc tgctgcccac gtggctggca ttgcagccat   240
gatgctgtct gccgagccgg agctcaccct ggccgagttg aggcagagac tgatccactt   300
ctctgccaaa gatgtcatca atgaggcctg gttccctgag gaccagcggg tactgacccc   359
```

<210> 131
<211> 389
<212> DNA
<213> Homo sapiens

<400> 131
```
gttagaaatc aagttttggg agcaggtgga tcaattctat gatgacaact ttcccatgga    60
aattcggcat ctgttggccc aatggattga aaatcaagac tggtaggatc aaacatattt   120
tccctagaag ttgatgcaca aatgtctgat gctctatcca tgtgaattta ttttatggtc   180
cacttttac tcagtagatg cattcttttc aggtaaagaa ctttctcaag gatttgaaag   240
ccttcccaaa gaaggggaat aattgtcctt tctggttcca ttcattgtaa atgaaaagtt   300
aatggttcca gtgcttcttt tctctgtaaa caaaaaccca ataattttt catgtattaa   360
aaaaagaagc aaatcaattg attgtcagt                                       389
```

<210> 132
<211> 465
<212> DNA
<213> Homo sapiens

<400> 132
```
ggaggcagga gatgcggatg aagatgaggc tgatgctaat agctctgact gtgaaccaga    60
ggggcccgtg gaagcggaag agcctcctca ggaggatagt agcagtcagt cagactctgt   120
ggaggaccgg agtgaggatg aggaagatga acattcagag gaggaagaaa caagtggaag   180
ttcagcatca gaggaatctg agtctgaaga gtctgaggat gcccaatcac agagccaagc   240
agatgaagag gaggaagatg atgattttgg ggtggagtac ttgcttgcca gggatgaaga   300
gcagagtgag gcagatgcag gcagtgggcc tcctactcca gggcccacta ctctaggtcc   360
aaagaaagaa attactgaca ttgctgcagc agctgaaagt ctccagccca agggttacac   420
gctggccacg acccaggtaa agacgcccat tcccctgctt ctgcg                     465
```

<210> 133
<211> 354
<212> DNA
<213> Homo sapiens

57

```
<400> 133
ctaaaaaacc taagggagtt actgcttgaa gacaaccagt taccccaaat accctctggt      60
ttgccagagt ctttgacaga acttagtcta attcaaacca atatatacaa cataactaaa     120
gagggcattt caagacttat aaacttgaaa aatctctatt tggcctggaa ctgctatttt     180
aacaaagttt gcgagaaaac taacatagaa gatggagtat ttgaaacgct gacaaatttg     240
gagttgctat cactatcttt caattctctt tcacacgtgc cacccaaact gccaagctcc     300
ctacgcaaac tttttctgag caacacccag atcaaataca ttagtgaaga agat           354
```

```
<210> 134
<211> 326
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(326)
<223> n = a,t,c or g
```

```
<400> 134
cccacgcgtc cggngacagg cctggccggc ctctgcagag acgtccaacc tcgtgcgcat      60
gcgcagccag gccctgggcc agtcggcgcc ctcgctcacc gccagcctga aggagctgag     120
tctccccaga agaggaagtt tccctgtgtg tccaaatgct gggagaacat caccccttgg     180
atgaattgcc accacattaa ataaaatata tccaaagctc nnnnnnnnnn nnnngggggg     240
gccgtttaa aggacccttg ggggggccaa ggtttacgcg ggctggcaag gtaatagttt     300
tttccttata gggagccgaa ttaaaa                                         326
```

```
<210> 135
<211> 210
<212> DNA
<213> Homo sapiens
```

```
<400> 135
cttctgtgtg tctgtcttcc tgtgggtgcc tgcccgtctc tttctcttct aacagcccct      60
ttgaaccagc tgatgcgctg tcttcggaaa taccaatccc ggactcccag tcccctccta     120
cattctgtcc ccagtgaaat agtgtttgat tttgagcctg gcccagtgtt cagaggtagt     180
tgggctcttc tttcttggtc gacgcggccg                                     210
```

```
<210> 136
<211> 310
<212> DNA
<213> Homo sapiens
```

```
        <400> 136
ttttttccaat acacatataa accatcattc actaaaatgt actatatatt caatattttg     60
tgtatactca ctgctttttcc taacgtgaaa aatttaccaa aatgctaatt gtgacttata    120
aggtatttaa cagactcccg acaaaaagca gaatgatcag cgaaatcgga aaagaaaagc    180
tgaaccatat gaaactagcc aaggtagtaa taatttcgta tcaacaaaag tactcaattc    240
taatgtactt agatagaatt ttctaactca tactaaataa ttagtttgta cacagggatt    300
cctgataaag                                                           310




        <210> 137
        <211> 502
        <212> DNA
        <213> Homo sapiens




        <400> 137
cttaaagtga aatttaaaaa gtaataataa tttttaaaaa tgtttaaagg cttactttgg     60
agagacagtt ttacatagct taatattttta tcattaaagg catggtggag ctggttcctg    120
cttccgatac cctcaggaaa atccaagtgg aatatggtgt gacaggatcc tttaaagata    180
aaccacttgc agagtggcta aggaaataca atccctctga agaagaatat gaaaaggctt    240
cagagaactt tatctattcc tgtgctggat gctgtgtagc cacctatgtt ttaggcatct    300
gtgatcgaca caatgacaat ataatgcttc gaagcacggg acacatgttt cacattgact    360
ttggaaagtt tttgggacat gcacagatgt ttggcagctt caaaagggat cgggctcctt    420
ttgtgctgac ctctgatatg gcatatgtca ttaatggggg tgaaaagccc accattcgtt    480
ttcagttgtt tgtggacctc tg                                             502




        <210> 138
        <211> 963
        <212> DNA
        <213> Homo sapiens




        <400> 138
ctcctagtcc cctccctagc ctgtcccttc ctcctcccgt tgctcctggt ggccaggaga     60
gcccttcacc ccacacagct gaggtggaga gtgaggcctc accacctcct gctcggcccc    120
tcccagggga agccaggctg gcgcccatct ctgaagaggg aaagccgcag cttgttgggc    180
gtttcccaag tgacttcatc caaggaaccg gctgagcctc ttcccttgca gccaacatcc    240
cccactctct ctggttctcc aaaaccttca accctcagc tcacttcaga gagctcagat    300
acagaggaca gtgctggagg cgggccagag accagggaag ctctggctga gagcgaccgt    360
gcagctgagg gtctgggggc tggagttgag gaggaaggag atgatgggaa ggaaccccaa    420
gttggggca gcccccaacc cctgagccat cccagcccag tgtggatgaa ctactcctac    480
agcagcctgt gtttgagcag cgaggagtca gaaagcagtg gggaagatga ggagttctgg    540
gctgagctgc agagtcttcg gcagaagcac ttgtcagagg tggaaacact acagacacta    600
cagaaaaaag aaattgaaga tttgtacagc cggctgggga agcagccccc accgggtatt    660
gtggccccag ctgctatgct gtccagccgc cagcgccgcc tctccaaggg cagcttcccc    720
acctcccgcc gcaacagcct acagcgctct gagcccccag gccctggtga gactgcagtc    780
```

```
acccagcttc catctttcc ctgagacccc tttctgtcga ctgttttct ccaggccctg     840
ggggtctgcc ccggggaat agacccctc tccccacctc cctttcctc acttagtgct     900
ctccttcccc catcctggct ccaggcatca tgcgaaggaa ctctctgagt ggcagcagca     960
ccg                                                                  963
```


          <210> 139
          <211> 376
          <212> DNA
          <213> Homo sapiens

          <220>
          <221> misc_feature
          <222> (1)...(376)
          <223> n = a,t,c or g

          <400> 139
```
cgccgctttg tttctcaaga gactgggaat ctgtatattg ccaaagtaga aaaatcagat      60
gttgggaatt atacctgtgt ggttaccaat accgtgacaa accacaaggt cctggggcca     120
cctacaccac taatattgag aaatgatgga gtgatgggtg aatatgagcc caaaatagaa     180
gtgcagttcc cagaaacagt tccgactgca aaaggagcaa cggtgaagct ggaatgcttt     240
gctttaggaa atccagtacc aactattatc tggcgaagag ctgatggaaa gccaatagca     300
aggaaagcca gaagacacaa gtcaagagtg gggaaanntc ttgagaaatc ccttaatttt     360
tcagcaggga ggatgc                                                    376
```


          <210> 140
          <211> 968
          <212> DNA
          <213> Homo sapiens

          <220>
          <221> misc_feature
          <222> (1)...(968)
          <223> n = a,t,c or g

          <400> 140
```
gcaaggggca gttggtgaac ttgctgcctc cagagaattt tccctggtgt ggaggcagcc      60
agggacccag gatgctccgg acctgttacg tgctctgttc ccaagctggt ccccgctcca     120
ggggctggca gtccctgagc tttgatggcg gggccttcca ccttaagggc acaggagagc     180
tgacacgggc cttgctggtt ctccggctgt gtgcctggcc cccactcgtc actcacgggc     240
tgttgctcca ggcctggtct cggcgactcc tgggctcccg gctctcaggc gcatttctcc     300
gagcatccgt ctatgggcag tttgtggctg gtgagacagc agaggaggtg aagggctgcg     360
tgcagcagct gcggaccctc agcctccgac cactgctggc agtgcccact gaggaggagc     420
cggactctgc tgccaagagt ggtgaggcgt ggtatgaggg gaacctcggt gctatgctgc     480
ggtgtgtgga cctgtcacgg ggcctcctgg agcccccag cctggctgag gccagcctca     540
tgcagctgaa ggtgacggcg ctgaccagta ctcggctctg taaggagcta gcctcgtggg     600
tcagaaggcc aggagcctcc ttggagctga gccccgagag gctggctgaa gctatggact     660
ctgggcagaa cctccaggtc tcctgcctca atgctgagca gaaccagcac ctccgggcct     720
ccctcagccg cctgcatcgg gtggcacagt atgcccgggc ccagcacgtg cggctcctgg     780
```
```

```
tggatgcgga gtacacctca ctgaaccctg cgctctcgct gctggtggct gccctggctg    840
tgcgctggaa cagcccgggt gaaggcgggc cctgggtgtg gaacacctac caggcctgtc    900
taaaggacac attctagcgg ctggggaggg atgcanaggc tgcgcacagg gccggcctgg    960
ccttcggg                                                             968
```

```
      <210> 141
      <211> 306
      <212> DNA
      <213> Homo sapiens
```

```
      <400> 141
agacggctga aaagggaggg gtattgaggg cggttcagag ggcgaggaga ggggcgtaga     60
gaacctgtgg agaagaagtt cactggaggg gcattaggcc tcgcactatg tatccagatc    120
atcagtaggg gaagagaaaa gatgggcaat atgtatagtc agacgagaag tgggatcaaa    180
cagagggctc atggagaagt aggctaccca ccacataacc ccatcatagg attgcaggag    240
atacagctat agataagaat atccaccagt cggtgagtga gcagatcaag aagaactttg    300
ccaaga                                                               306
```

```
      <210> 142
      <211> 316
      <212> DNA
      <213> Homo sapiens
```

```
      <400> 142
ccacactcac atttaatata ctgttaggtt gtttactttg aggcaatgtc atcctcatta     60
gtatagggca ttatattcct gaatagcaga atactcctcc attcatgaag ttcagtatta    120
tacattctta ttattgcaca acaaatagaa gactttggat ttccttatat aagtaccttg    180
acagatgact aacccatttt tcctatgctt tacaactatg atcagtaact gtaatttttt    240
taaaggtcct cctggacccc cgggtgaaaa aggagatcga ggtcccactg gagaaagtgg    300
tccacgagga tttcca                                                    316
```

```
      <210> 143
      <211> 339
      <212> DNA
      <213> Homo sapiens
```

```
      <400> 143
gacaatacca aatgaatgaa cgtgactgtg ttccaacaaa actttattta caaaaacagg     60
gatgggccgg atgtagccag aggccataat ttgccaaccc ctgatttaga cgaaggaaag    120
gagcagtgct tcactgcttt taaattaatt ctgtattctc acaaggccta cattgaaatg    180
```

```
gaattatagc ctcatttttt cttagaacct ttatattttg ttttattcat atacagggtt    240
gtcaagctgg acagactatt aaagttcaag tctcctttga tttgcttagt ctgatgttta    300
catttgtaag tccatgtacc aacgatttaa tcatacacg                           339
```

```
        <210> 144
        <211> 2018
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 144
acaagttatc tgtgaatcat aggagaacac atcttacaaa actcatgcac actgttgaac     60
aagctacttt aaggatatcc cagagcttcc aaaagaccac agagtttgat acaaattcaa    120
cggatatagc tctcaaagtt ttcttttttg attcatataa catgaaacat attcatcctc    180
atatgaatat ggatggagac tacataaata tatttccaaa gagaaaagct gcatatgatt    240
caaatggcaa tgttgcagtt gcatttttat attataagag tattggtcct ttgctttcat    300
catctgacaa cttcttattg aaacctcaaa attatgataa ttctgaagag gaggaaagag    360
tcatatcttc agtaatttca gtctcaatga gctcaaaccc acccacatta tatgaacttg    420
aaaaaataac atttacatta agtcatcgaa aggtcacaga taggtatagg agtctatgtg    480
cattttggaa ttactcacct gataccatga atggcagctg gtcttcagag ggctgtgagc    540
tgacatactc aaatgagacc cacacctcat gccgctgtaa tcacctgaca catttttgcaa    600
ttttgatgtc ctctggtcct tccattggta ttaaagatta taatattctt acaaggatca    660
ctcaactagg aataattatt tcactgattt gtcttgccat atgcattttt accttctggt    720
tcttcagtga aattcaaagc accaggacaa caattcacaa aaatctttgc tgtagcctat    780
ttcttgctga acttgttttt cttgttggga tcaatacaaa tactaataag ctcttctgtt    840
caatcattgc cggactgcta cactacttct ttttagctgc ttttgcatgg atgtgcattg    900
aaggcataca tctctatctc attgttgtgg gtgtcatcta caacaaggga ttttttgcaca    960
agaatttta tatctttggc tatctaagcc cagccgtggt agttggattt tcggcagcac   1020
taggatacag atattatggc acaaccaaag tatgttggct tagcaccgaa aacaacttta   1080
tttggagttt tataggacca gcatgcctaa tcattcttgt taatctcttg gcttttggag   1140
tcatcatata caaagttttt cgtcacactg cagggttgaa accagaagtt agttgctttg   1200
agaacataag gtcttgtgca agaggagccc tcgctcttct gttccttctc ggcaccacct   1260
ggatctttgg ggttctccat gttgtgcacg catcagtggt tacagcttac ctcttcacag   1320
tcagcaatgc tttccagggg atgttcattt ttttattcct gtgtgtttta tctagaaaga   1380
ttcaagaaga atattacaga ttgttcaaaa atgtccctg ttgtttggga tgtttaaggt   1440
aaacatagag aatggtggat aattacaact gcacaaaat aaaaattcca agctgtggat   1500
gaccaatgta taaaaatgac tcatcaaatt atccaattat taactactag acaaaaagta   1560
ttttaaatca gttttctgt ttatgctata ggaactgtag ataataaggt aaaattatgt   1620
atcatataga tatactatgt ttttctatgt gaaataggtc ctgtccaaaa atagtattgg   1680
ccagatattt gggaaaagta aattgggttt cctcagggag tgatatcccc ttgcacccaa   1740
gggaaaagat tttctttcta acacgagaag tatatgaatg tcctgaaggg aaaccctggg   1800
ccttgatatt tctgtgactc gtgttgcctt tgaaactagt cccctaccac ctcggtaatg   1860
agctccatta cagaaagtgg aacataagag aatgaagggg cagaatatca aacagtgaaa   1920
agggaatgat aagatgtatt ttgaatgaac tgttttttct gtagactagc tgagaaattg   1980
ttgacataaa ataaagaatt gaagaaacaa aaaaaaaa                           2018
```

```
        <210> 145
        <211> 429
        <212> DNA
        <213> Homo sapiens
```

<400> 145
```
ggcacgaggg aagctgcccc gtccaggttc atgttcctct tatttctcct cacgtgtgag      60
ctggctgcag aagttgctgc agaagttgag aaatcctcag atggtcctgg tgctgcccag     120
gaacccacgt ggctcacaga tgtcccagct gccatggaat tcattgctgc cactgaggtg     180
gctgtcatag gcttcttcca ggatttagaa ataccagcag tgcccatact ccatagcatg     240
gtgcaaaaat tcccaggcgt gtcatttggg atcagcactg attctgaggt tctgacacac     300
tacaacatca ctgggaacac catctgcctc tttcgcctgg tagacaatga acaactgaat     360
ttagaggacg aagacattga aagcattgat gccaccaaat tgagccgttt cattgagatc     420
aacagcctc  .                                                         429
```

<210> 146
<211> 717
<212> DNA
<213> Homo sapiens

<400> 146
```
gatgaaactt ccggtctcat tgtccgggaa gtgagcattg agatttcgcg ccagcaagtg      60
gaagaactct ttggacctga agattactgg tgccagtgtg tggcctggag ctcagcgggt     120
accacaaaga gccggaaggc gtatgtgcgc attgcatagg aactcatgac ctgacatcca     180
ttagcagagt catcagagtc atctggctgc tgtgttgaga atggaccatg ctgggcaagg     240
ggagaagcag gaagaccagt gatgagactg cagctatgag agatgttaag ctactgtaga     300
ttggaagcag tggaggtggt gaggccagga tttcagatat atttaaaagt agagataaca     360
gcttttgttg agaccttgga tgtgtgatgt gagagaaaga agagaaagga tgattttgaa     420
agggcctaag cctttatcca aggatttctt tcaaatgtct ttagtgaagc cattcctgcc     480
tcacagaggg aggaggctgg gcattccttt ctcaatactt tcagagcagt ttgtccatac     540
ccctaatata gtgcttgtct catttcgaat tatattcact cgtaaaattt gtgtttcatg     600
ccagtgagtt ccatgagatc aagaattcta ttgtacttaa ttttatatct ctcctgctta     660
gcacaatacc tagagtatca cagatgttta acaattttct tgaattaaaa ctgttat       717
```

<210> 147
<211> 367
<212> DNA
<213> Homo sapiens

<400> 147
```
ggcacgagat cgattcatgt aaagctggac gtgggcaagc tgcacaccca gcctaagtta      60
gcggcccagc tcaggatggt ggacgacggc tctgggaagg tggagggcct acctgggatt     120
tgaccagagt ccgcctggct ccaggctctg ccacccacag gaagaagaaa ctacactgac     180
agatgtgaga cagtgtttcc ccttcagtct ttgaacaggc tttgtgtttt ctaaatgaca     240
ctggataaaa gggaattcat tcaagagctc caaggcttcc ctttccgccc ggcttctgtt     300
gccctggcct gagcagcgag cagctgggag gggactgaac tgcccctaac cagggttgtg     360
gctggcg                                                             367
```

```
      <210> 148
      <211> 791
      <212> DNA
      <213> Homo sapiens

      <220>
      <221> misc_feature
      <222> (1)...(791)
      <223> n = a,t,c or g



      <400> 148
cgagacccga ccctgggcgt ggtgcatcga ggtagatgca aagatgctgg ccagagcaag      60
tgtcgcctgg agcgggctca agccctggag caagccaaga agcctcagga agctgtgttt     120
gtcccagagt gtggcgagga tggctccttt acccaggtgc agtgccatac ttacactggg     180
tactgctggt gtgtcacccc ggatgggaag cccatcagtg gctcttctgt gcagaataaa     240
actcctgtat gttcaggttc agtcaccgac aagcccttga gccagggtaa ctcaggaagg     300
aaagatgacg ggtctaagcc gacacccacg atggagaccc agccggtgtt cgatggagat     360
gaaatcacag ccccaactct atggattaaa cacttggtga tcaaggactc caaactgaac     420
aacaccaaca taagaaattc agagaaagtc tattcgtgtg accaggagag gcagagtgcc     480
ctggaagagg cccagcagaa tccccgtgag ggtattgtca tccctgaatg tgcccctggg     540
ggactctata agccagtgca atgccaccag tccactggct actgctggtg tgtgctggtg     600
gacacagggc gcccgctgcc tgggacctcc acacgctacg tgatgcccag ttgtgagagc     660
gacgccaggg ccaagactac agaggcggat gacccccttca aggacaggga gctaccaggc     720
tgtccagaag ggaagaaaat ggagtttatc accagcctac tggatgctct caccactgac     780
atggntcagg g                                                          791



      <210> 149
      <211> 335
      <212> DNA
      <213> Homo sapiens



      <400> 149
ggcacgagca aactcggggc tcagcttggg gacgggagtt gatagtcagg tgcctggaac      60
ataatggaga ccgtccatat tggttgaatg agtggatgaa tgaattaatg aatttctttt     120
ctcttaagtc ctgcagctga ttaagtcaca gaaatttctg aataagttgg tgatcttggt     180
ggaaacggag aaggagaaga tcctgcggaa ggaatatgtt tttgctgact ccaaagtaag     240
tgacagcaaa cttctaaagt gggctgtgag gtagggaggg dacacaagcg ttttgaggct     300
cgctgtgtgc cagggagtgt atcattagct cactc                                335



      <210> 150
      <211> 1293
      <212> DNA
      <213> Homo sapiens
```

64

```
      <400> 150
cgacgcctgt  ccctcttaga  cttgcagctc  ggtcctcttg  gcagagaccc  cccgcaggag        60
tgcagcacct  tctccccaac  agacagcggg  gaggagccgg  ggcagctctc  ccctggcgtg       120
cagttccagc  ggcggcagaa  ccagcgccgc  ttctccatgg  aggacgtcag  caagaggctc       180
tctctgccca  tggatatccg  cctgccccag  gaattcctac  agaagctaca  gatggagagc       240
ccagatctgc  ccaagccgct  cagccgcatg  tcccgccggg  cctccctgtc  agacattggc       300
tttgggaaac  tggaaacata  cgtgaaactg  gacaaactgg  agagggcac   ctatgccaca       360
gtcttcaaag  ggcgcagcaa  actgacggag  aaccttgtgg  ccctgaaaga  gatccggctg       420
gagcacgagg  agggagcgcc  ctgcactgcc  atccgagagg  tgtctctgct  gaagaacctg       480
aagcacgcca  atattgtgac  cctgcatgac  ctcatccaca  cagatcggtc  cctcaccctg       540
gtgtttgagt  acctggacag  tgacctgaag  cagtatctgg  accactgtgg  gaacctcatg       600
agcatgcaca  acgtcaaggt  gaggcctcgg  gggcagggtc  cccccatctt  ggcagccacc       660
tgtccagaag  cccagtgtgg  ggacccactc  tcaccaccag  ggatccggct  gctgaggtgg       720
ctcaaacctt  cccacgtagg  aaagagggag  agggcaatgc  catcaacgag  tccaggaact       780
gggttgagcg  ctttacccca  agaacagaca  cacactgtct  gccactgtct  agctgttggt       840
ataaaaccca  ctctcaactc  tgaacatcag  tttcccagtc  tgtcaaatgg  gagtgtgagc       900
tacctgccaa  aatgcaggga  ggcttctggg  gaagctcggg  gttatgaatg  acctctcctg       960
gtgtttgtta  aagaatcaag  actgggcatg  gtggcccacg  cctgtaatcc  cagcactggg      1020
aggccaaggc  aggaagatgg  cttgagccca  ggagtttgag  accagcctgg  gcaacatggc      1080
aagacctcat  ctctactaaa  aattgaaaaa  ttagccgggc  acagtagcgt  gcacccatag      1140
tcccagctgc  ttgagaggct  gaggcaggag  ggccacttga  gcccgggagg  ttgaggctgc      1200
agtgagccat  gatcacacca  ctgcactcca  gcatgggtga  cagagtaaaa  ccctgacatg      1260
tattgcgggc  gctctagagg  ataacaagca  tac                                    1293



      <210> 151
      <211> 349
      <212> DNA
      <213> Homo sapiens



      <400> 151
ggcacgagcg  gcacgagcct  tctcctactg  cattagcatt  tggggaccac  cctattgtac        60
aaccaaagca  attatccttt  aaaattattc  aggtaaatga  taattaaaat  gttttttttct       120
atggcttcta  agaaaccatt  gactaactta  ctaacaacta  agatgtctgt  ttgtttttata       180
tgtagtcata  aagcagaatt  acacatcaag  aaagataact  tactaaacaa  aaacaacaga       240
atttgtagga  aggagtgaga  aactgaaaca  cacaatttac  tatcagcttt  ttaaacaacc       300
gttaacatgt  cagttctgtt  tactgattct  ttctgaactt  aatttccag                    349



      <210> 152
      <211> 324
      <212> DNA
      <213> Homo sapiens



      <400> 152
ggcacgagga  ccttccttgc  tttcagaatt  tcacccaggg  tctgacaggc  ctcaagaaag        60
gagaactagt  tatgaaccga  ttcatccagg  cccatcccca  gtggatcatg  attcactgga       120
atcgaagcga  ccacgtctgg  aacaggcttc  tgattctcat  tatcagggtc  acatcactgg       180
cgaatcccta  ccaggacgtg  tacactagca  gctcctcact  gtggaatctg  atgggcaatg       240
```

```
ccatggtgat tacccactat atccgtctta ccccatatgt tcaaagtaaa ctcggttccc        300
tagggaacct gatgccatgt tacc                                                324
```

```
        <210> 153
        <211> 377
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 153
ggcacgagaa aagaagaatt cagtgcagaa gaaaattttc tcattttgac ggaaatggca         60
accaatcatg tacaggttct tgtagaattc acaaaaaagc taccaggtat tttttaaata        120
atcacagtta atatttattg agagtttaaa tatgtgccca cagattagat tacctatttt        180
acatacggtg ttttaatttt caaaacattc ctgtgagatc agctctattt tcactattac        240
tttgccaagt attttcacat gtacttattt cactgctatt ctctacaata gtcttgtgac        300
attgagaaag gcaggtctgt tctttgtaaa atgaaaatca tttaatatct gatttaaagt        360
aactgtcgaa ctactat                                                       377
```

```
        <210> 154
        <211> 1224
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 154
ggtttttttt tttttctttt tgggaaaggc attggccact ttggacttta ttagcaacag         60
taatgtcccc tgacatacgc acaagcttgt agctccacgg ccaggtcttc ccccaacctc        120
acaatggccc cgtgatgcag gcaggcaggc gagtgggggt ctcccctcct tatccacagg        180
gccaccgaaa ggcccacgag acggccttgc ccgaggtcac ccagcggagt ggcttgctgg        240
gagccctggg aataacagtc ccacacaagg ctctctccct ccgcagctgg acctgtacgc        300
gggggctctg tttgtgcaca tctgcctggg ctggaacttc tacctctcca ccatcctcac        360
gctcggcatc acagccctgt acaccatcgc aggtatggtg cctgcagcag ggaggtccac        420
ccaggggacg tgtaaagggg tcagaaggcc acctcccct acaggcccga gggagcagcc        480
caggaagtgg ccccagcagg agcccagaa gttcctcccc gtgtccctcc tccctggggc        540
cagggccccc tccagcaacc ttgcttccac tggcaggggg cctggctgct gtaatctaca        600
cggacgccct gcagacgctc atcatggtgg tggggctgt catcctgaca atcaaaggtg        660
aggacagagt ctgtggccat ggcggggctg tccccacagc gagccctttg gagtctggca        720
ctgcccggca ctgtgcagga ttcatgccgt tggggttctg ggtagcatcg ctgggagtgg        780
gtgggttcag gaggttgagc cactaggcag tcagcccccc tgctggcccc tcagggactg        840
ccctggctgg tagaggctac ccaccctgct gccccgctgt taccagctct ggccctggca        900
aggagctgac tcaggaactc agggccagcc acaccgcat tggctcagcg cttgatggtg        960
aggtggggct gtaggcgggt gtgaaggcac acaaccagga ggccataaaa ctgcctgggc       1020
agctcctcca attgtttaaa agcatgtaca aaatgccaag aggtgatgct acctcctgca       1080
ggacaaaggc cagggaggaa agaagagagc tgggagagat tggcgatact agtctggaac       1140
agataggaaa ctcacagggc tgcccggaga gagcgtgagc tcaccgtccc tggaagtatg       1200
taagcagagc caggagctcg tgcc                                              1224
```

```
        <210> 155
        <211> 345
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(345)
        <223> n = a,t,c or g




        <400> 155
ggcacgagcg gcacgagatc tgaagaggta tattgcttac agaaagagcg ggagatggta       60
aatcacagtc ttcaagagac ttctgagcaa aacgttattc tacagcatac tcttcagcaa      120
cagcagcaaa tgttacaaca agagacaatt agaaatggag agctagaaga tactcaaact      180
aaacttgaaa aacaggtgtc aaaactggaa caagaacttc aaaaacaaag ggaaagttca      240
gctgaaaagt tgagaaaaat ggaggagaaa tgtgaatcag ctgcacatga agcagatttg      300
aaaaggcaaa aagtgattga gcttactggc actgccaggc aagtn                      345




        <210> 156
        <211> 340
        <212> DNA
        <213> Homo sapiens




        <400> 156
ggcacgagct tctacttgta caggaaaggt tacttgagtt tgtccaaagt ggtgccgttt       60
tctcactatg ctgggacatt gctgctactt ctggcacgtg tggcctgcct cctaggcatt      120
gtccgctggg cctacccca cttcccgcag tttctcgcca tctcctctcc gatccatctc      180
tacctgacgt cataactcta tatgcatgtt atgcggtcca tcttagtctt ctaaaaaggc      240
catttttagct tacctgccat caagctatac atgtggaaat atacactgta ttattttccc      300
tttccaggtg attacttacc tcatctgttc ttatatctgc                            340




        <210> 157
        <211> 478
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(478)
        <223> n = a,t,c or g




        <400> 157
gagactccaa gccccagttt cacctcagag gcagagatga ggggtccccc ggtcctgctc       60
```

```
ctccaggccg ccccaatgga gtgtcctgtt ccgcagggga tcccggccgg gtccagtcct    120
gagcctgcac ctgacccccc ggggcctcat ttcctccggc aggagcgcag cttcgagtgc    180
cgcatgtgcg gcaaggcctt caagcgctcg tccacgctgt ccacccacct gctcatccac    240
tcagacacgc ggccctaccc ctgccagttc tgcggcaagc gtttccacca gaagtccgac    300
atgaagaagc acacctacat ccacacaggt gagaagccgc acaagtgcca ggtgtgcgga    360
aaggccttca gccagagctc caacctcatc acccacagac tcagagagaa cccaccatgg    420
tgctgtctcc tgccgacaag accaacgtca aggccgcctg gngtaagggt cgcgcgca     478
```

```
<210> 158
<211> 332
<212> DNA
<213> Homo sapiens
```

```
<400> 158
ggcacgagca gctcaccaac aacacagcca ctgcccctc tgccacgccc gtgtttgggc    60
aagtggcagc cagcaccgca ccaagtctgt ttgggcagca gactggtatc acagccagca    120
cagcagttgc cactccacag gtaatcagct caaggttcat taatctagat ttttagtata    180
tagtattatt gaatatatat aatgttttat atattagact ttatacttga gacataggaa    240
ataatttatg tataactgtt aattaaattt tatatttgct agattagaaa attctattaa    300
tttattaatg aattatatct aattatgtga ca                                 332
```

```
<210> 159
<211> 868
<212> DNA
<213> Homo sapiens
```

```
<400> 159
cccacgcgtc cggaataaag agagaactct gttactattg tttttacatc accaaataat    60
tatttaatat cgttagctaa gagaagaatt ggctatgaac tgtactttaa caactgacac    120
aactgcatac aagttataaa gtttaataat ctttatcatc ttggaaaata aatctcttct    180
tgctaagtat cagtttttaa aaattgcccc atgtattaga tatgtatttt tttaacaaaa    240
atgttctgtg tattaattat tttgaaataa attttaagtt cacaaaaagc cattacaaga    300
agtggaaata gcagcaatta cacatggtgc tcttcaggga ttagcctact tacattctca    360
tactatgatt catagagata tcaaagcagg aaatatcctt ctgacagaac caggccaggt    420
gaaacttgct gactttggct ctgcttccat ggcatcacct gccaattcct ttgtgggaac    480
gccgtattgg atggccccag aagtaatttt agccatggat gaaggacaat atgatggcaa    540
agtagatgtg tggtctcttg gaataacatg tattgaacta gcggaaagga agcctccttt    600
atttaatatg aatgcaatga gtgccttata tcacatagcc caaaatgaat cccctacact    660
acagtctaat gaatggtgag tattgttaat atatatattg ctcagtgttg aataaatgaa    720
atgctttttc ataatctgtt atcaaagtga tttaatttca gttaggtaaa atgtatcacc    780
ttataagata ttaaaataga tgtattttac ccttttaaat atatttattc tttatcatgt    840
ttccatttca tggcatacgt ataactgg                                      868
```

```
<210> 160
```

```
      <211> 1404
      <212> DNA
      <213> Homo sapiens




         <400> 160
gcgccacgcg  cggcctggcg  gcggcggcca  ctctaaccag  cgcaaaatgt  ccctggaaca    60
ggaggaggaa  acgcaacctg  ggcggctcct  aggacgcaga  gacgccgtcc  ccgccttcat   120
tgagcccaac  gtgcgcttct  ggatcaccga  gcgccaatcc  tttattcgac  gatttcttca   180
atggacagaa  ttattagatc  ctacaaatgt  gttcatttca  gttgaaagta  tagaaaactc   240
gaggcaacta  ttgtgcacaa  atgaagatgt  ttccagccct  gcctcggcgg  accaaaggat   300
acaggaagct  tggaagcgga  gtcttgcaac  agtgcatccc  gacagcagca  acctgatccc   360
caagcttttt  cgacctgcag  cgttcctgcc  tttcatggcg  cccacggtat  ttttgtcaat   420
gacgccactg  aaagggatca  agtccgtgat  tttacctcag  gttttcctct  gtgcctacat   480
ggcagcgttc  aacagcatca  atggaaacag  aagttacact  tgtaagccac  tagaaagatc   540
attactaatg  gcgggagccg  ttgcttcttc  aactttctta  ggagtaatcc  ctcagtttgt   600
ccagatgaag  tatggcctga  ctggcccttg  gattaaaaga  ctcttacctg  tgatcttcct   660
cgtgcaagcc  agtggaatga  atgtctacat  gtcccgaagt  cttgaatcca  ttaaggggat   720
tgcggtcatg  gacaaggaag  gcaatgtcct  gggtcattcc  agaattgctg  ggacaaaggc   780
tgttagagaa  acgctagcat  ccagaatagt  gctgtttggg  acctcagctc  tgattcctga   840
agtcttcacc  tactttttta  aaaggaccca  gtatttcagg  aaaaacccag  ggtcattgtg   900
gattttgaaa  ctgtcttgta  ctgtcctggc  aatgggactg  atggtgccat  tttcttttag   960
tatatttcca  cagattggac  agatacagta.ctgtagtctt  gaagagaaaa  ttcagtctcc  1020
aacagaagaa  acagaaatct  tttatcacag  aggggtgtag  gccgtgagtt  ttaggtgaat  1080
ttatgtggtt  ccctgcttga  aaaccttccc  cctctcccag  gttcggttta  gagaactttg  1140
cccacaggtc  ttctggggac  cccagaggtg  tctgtgctga  caaggcgact  tcagattcca  1200
tactgagatc  gttcccaggc  tggcgtctct  ggggtttta  aggctggctg  gagaagacag  1260
tgggaagggt  gccccgtctg  acacccctgg  ggttgctgag  ggaacggttg  gagtggggat  1320
cggcctgcga  aaggatactg  tgaaatcact  aattaactaa  taaacctgtc  tcaagttgag  1380
gatttgaaga  aaaaaaaaaa  aaag                                            1404




      <210> 161
      <211> 562
      <212> DNA
      <213> Homo sapiens




         <400> 161
cccacgcgtc  cgggagattg  gaagtcttct  ataacgggac  ctggggcagc  gtcggcagga    60
ggaacatcac  cacagccata  gcaggcattg  tgtgcaggca  gctgggctgt  ggggagaatg   120
gagttgtcag  cctcgcccct  ttatctaaga  caggctctgg  tttcatgtgg  gtggatgaca   180
ttcagtgtcc  taaaacgcat  atctccatat  ggcagtgcct  gtctgcccca  tgggagcgaa   240
gaatctccag  cccagcagaa  gagacctgga  tcacatgtga  agatagaata  agagtgcgtg   300
gaggagacac  cgagtgctct  gggagagtgg  agatctggca  cgcaggctcc  tggggcacag   360
tgtgtgatga  ctcctgggac  ctggccgagg  cggaagtggt  gtgtcagcag  ctgggctgtg   420
gctctgctct  ggctgccctg  agggacgctt  cgtttggcca  gggaactgga  accatctggt   480
tggatgacat  gcggtgcaaa  ggaaatgagt  catttctatg  ggactgtcac  gccaaaccct   540
ggggacagag  tgactgtgga  ca                                               562




      <210> 162
```

<211> 1812
<212> DNA
<213> Homo sapiens

<400> 162
```
gccttgcttg gaggcaaagc gtcctccact ctgtcctcag gactcagctg tgtggccttg      60
gatttctttt tgcgggactt gcgccctttg ggtgccaacg gtccaggatc cccctggaac     120
cagatggtac ggccatgccg gtcctgcagg gagctcatgc ctggcatgcc atagcagcgc     180
agccaggctc gaaaggcagc aaagtcctcc tccccgctct ctgacccgta gccctgccc      240
cccaactgga ccacttcctt gggcactgag tgacatagct ccagcaggtc tggattctgc     300
agcttggtcc ttatcttctg gctcagggtc agctccgggc tcggcctgtg ctgctgcagg     360
gcctccagga ccgagcgggc cttctcaaag ggggggatct tcagccggta caggatctct     420
gcccgcagat agttgccaat gccattgaag aacctctggt ccaggagggc ctcgcagatg     480
ggccggtcaa aggccttatc cgctaggttt cgtagcacat tctccctgaa ctgctggtac     540
tcctgcaaga cacagggccc gcggcccggc tgccactttc ccccaaggtc ccagcggccg     600
aaccggcgga tgtccacgaa acatagggcg agccgggggc caggcggggc cgtgtaaaag     660
cgcaggtggg catggcgtgg cagctcctcg cggggcacca gctgaaaaga gccggacatg     720
ccgaagcgga agaccagggc cagtggctcc tgttggggct gggccccagg cagagggctc     780
agtatcaggc gcagctcctt gccgcgggct gaagctgaga tgcggtaggc actgctctca     840
aagggcacct cagggttgcg gctgacagag gacttctcca cgcagccgcc gaacaccagc     900
gccctgcagg cctcattcac aaactggctg gccaggtgca gctcggggcc ctcaggcatc     960
ctgagggagg gtggcagagt cctggctggg aggtggcgga agaacctgac ttcccactgc    1020
ctggcgccgg cgagatgcgg gggcaggtct gaggccccgg gtcgccgctg tctctgcggt    1080
tgggggaagt cacccagcta gcgtgggaca gggtcggcac ccccagcagg aaacagcagc    1140
gacgagccag agcggagtcg cctgcagctg cgcgcaggac gtgcacaggt gcgcggtacg    1200
cacaggccct agggacccgg tggggatctt aagcaccaac gaacagtcag acctaactca    1260
taaacaaaca tcatcacggc ctgccctgtc agaagcgcag ccaagcaaca acaacaacaa    1320
aaaaaggcga ggaggtagac ccacttgaga tggttctgtt gcggagagtc tctgaaatca    1380
gaaagcgcca gtccgcaaaa acgaggaaac ccgacgtgtc cggcggaagg aaccgccagt    1440
acaaaggccc tgaggcgaga aagagattgg tcactgaaag aactcaaaga agtcctgtgt    1500
ggctggagta tagctgcggg ttagtgctgg caggtgaaga cagagaagca aacccaggtc    1560
aggtccggtt gggcctcggg agggcctccg tgtggagtct gcacttcatt ctaagtgtat    1620
acctaaccca tcgccacgat ttcccctcct tcacactacc ctgctacgtc tccttattag    1680
gcgtaataaa attatgtggc tttgtaagaa attggttttt agagatgcat gttaaagtat    1740
tgggtatgaa atgtcatgat ttgtctaatt tactttaaaa tacttctgcc ataataaatg    1800
aatagaatta ac                                                        1812
```


<210> 163
<211> 333
<212> DNA
<213> Homo sapiens

<400> 163
```
agctgacgtg gtctgcctgt tattggagag atatattaag aatccagttg tggattgcag      60
ctgatattct tttgcgaatg cttgaaaaag cacttcttta tagtgaacac cagaacatca     120
gcaacactgg actgtcatcc caaggcttat tgatatttgc ggagttgatt cctgccatta     180
agaggacgtt ggctcgcctt ctcgtgatca ttgcgagcct ggactatggc attgagaaac     240
ctcatttagg aacaggcatg caccgtgtga tcggactgat gcttctatac ttaatctttg     300
caaatgctga aagcgtgatt agagtcattg ggg                                  333
```

```
<210> 164
<211> 134
<212> DNA
<213> Homo sapiens




<400> 164
tttttttttt gagatggagt ctcgctctgc tgcccaggct ggagtgcagt ggtgcaatct      60
tggctcactg caagctctgc ctcccaggtt cacgccattc tcctgcctca gcctcccgag     120
tagctgggac taca                                                       134




<210> 165
<211> 839
<212> DNA
<213> Homo sapiens




<400> 165
cctgagcccg gcgagcagga gaggaggtct tccgggccgc ggcctccgag cgcgcgggat      60
ttgcagaact taatatgaat gtgaagaact tgcaaagaaa cttgaaaaca gccaaaggga     120
tggcatatca agaaataaat tggccttggc agaattgtat gaagatgaag tgaagtgcaa     180
atcttccaag tctaatagac ctaaagccac agtcttcaag agcccacgga caccacctca     240
acggttttac tcaagtgaac atgaatacag tggattaaat atagttcgac cttcaactgg     300
gaaaattgtg aatgaacttt tcaaagaggc aagggaacat ggggctgtcc ctctgaatga     360
agccacaaga gcttcaggtg atgataaatc taagtcattt acaggtggag gatacagatt     420
gggtagttct ttttgtaagc ggtctgaata tatctatgga gaaaatcagc tgcaagatgt     480
tcagattttg cttaaactgt ggagcaatgg tttcagttta gatgatggag aattgagacc     540
ttacaatgaa ccaacaaatg ctcaatttct ggagtctgtt aagagagggg tgactctcat     600
tgcatgtatg cctgaaattc agcaacttat gttagaaatc ttttaatgtg gcattactgc     660
tggcagaaga tttcaaaagg ttagtttgaa gttataattt gtgaaagtaa actcagatat     720
tcagtgctct cacccatcca aagaacattg taacttacca gctcttcttg ctaaaggatg     780
aggaatcaag tgattttgct atgataataa aagcttttct gtgttatgat taaaaaaaa     839




<210> 166
<211> 1256
<212> DNA
<213> Homo sapiens




<400> 166
ctcgatcacc tgatggccct gcggcgcagc tccgggttg acccacgcgt ccgagcggat      60
gttcactctc acgaccatga ttcaagctct tgcacctgtt atgggatggg acaggaagcc     120
actgaagatg ttttcatcag aagagatgag aggacatctt catcatcatc ataaatgtct     180
gacgaagatc ctgaaggttg aggggcaggt tccagatctg ccatcctgcc tgcccctgac     240
tgacaacacc cgcatgctgg cctctatcct catcaacatg ctctatgatg acctgcgctg     300
```

```
tgacccggag cgcgatcact tccgcaagat ctgtgaggaa tatatcacgg gcaagtttga    360
cccccaggac atggacaaga acttgaatgc catccagaca gtgtcaggga tcctgcaggg    420
ccccttttgac ctgggcaacc agctgctggg actgaaaggt gtgatggaga tgatggtggc    480
actatgtggc tcagagcgcg agacggacca gctggtggcc gtggaggccc tcatccatgc    540
ctccacgaag ctcagccgcg ccaccttcat catcaccaat ggagtgtcac tgctcaaaca    600
gatctacaag accaccaaaa atgagaagat caagatccgc acactggtgg gactctgtaa    660
gctcggctct gcaggtggca cagactacgg tctcaggcag tttgcggaag ggtcgacaga    720
aaaactggcc aaacagtgtc gcaagtggct gtgcaatatg tccatagaca ctcggacccg    780
acgctgggca gtggagggcc tggcctacct cacgctggac gctgatgtga aggacgactt    840
tgtccaggac gtccctgccc tgcaggccat gtttgagctg gccaagacca gtgacaagac    900
catcctgtac tcggtggcca ccaccctggt gaactgcacc aacagctacg atgtcaagga    960
ggtcatccca gagcttgtcc agctcgccaa gttctccaag cagcatgtgc ccgaggaaca   1020
ccccaaggac aagaaggact ttatagacat gcgggtgaag cggcttctga aggcgggtgt   1080
catctctgcc ctggcttgca tggtgaaagc agatagtgcc atcctcactg accagaccaa   1140
ggagctgctg gccagggtat tcctggcact gtgtgacaac ccaaaggacc gaggcaccat   1200
tgtggctcaa ggtggtggca aggccctgat tcccctggct ttggagggca cagatg       1256
```

<210> 167
<211> 892
<212> DNA
<213> Homo sapiens

<400> 167
```
atgtggacag cgtgggtggc ggcagcgagt ctcggtccct ggactcaccc acttccagcc     60
caggcgctgg cacgaggcag ctggtgaagg cttcgtccac aggcactgag tcctcagatg    120
actttgagga gcgagaccct gacctgggag acgggctgga gaatgggctg ggcagcccct    180
tcgggaagtg gacactgtcc agcgcggctc agacccacca gctgcggcga ctgcggggcc    240
cagccaagtg ccgcgagtgc gaagccttca tggtcagcgg gacggagtgt gaggagtgct    300
ttctgacctg ccacaagcgc tgcctggaga ctctcctgat cctctgtgga cacaggcggc    360
tcccagcccg gacacccctt tttggggttg acttcctgca gctacccagg gacttcccgg    420
aggaggtacc ctttgtggtc acgaagtgca cggctgagat agaacaccgt gccctggatg    480
tgcagggcat ttaccgggtc agcgggtccc gggtccgtgt ggagcggctg tgccaggctt    540
tcgagaatgg ccgagcgttg gtggagctgt cggggaactc gcctcatgac gtctcgagtg    600
tcctcaagcg atttcttcag gagctcaccg agcccgtgat ccccttccac ctctacgacg    660
ccttcatctc tctggctaag accttgcatg cagaccctgg ggacgaccct gggaccccca    720
gccccagccc tgaggttatc cgctcgctga agaccctctt ggtacagctg cctgactcta    780
actacaacac cctgcggcac ctggtggccc atctgttcag ggtggctgca cgatttatgg    840
aaaacaagat gtctgccaac aacctgggca ttgtgtttgg ccgacactg ct            892
```

<210> 168
<211> 394
<212> DNA
<213> Homo sapiens

<400> 168
```
ggactccatg tcatctctct gcacagcgct gatggtcgtc actgggagga tccccttttct     60
gagcttgaca gtgaacgtgt gtctgcattt cttgtcactg agaccctggt gttctatttg    120
ttctgtctcc ttgcagatga aaccgtcgtg ccaccagatg ttccaagcta cctctcttct    180
```

```
caggggaccc tttctgaccg acaagaaacc gtggtcagga ccgagggtgg ccctcaggcc.     240
aatgggcaca ttgagagcaa tggtaaggcc tcagtaaccg tgaagcagag ctctgctgtg     300
actgtgtctc tgggtgctgg aggtggcctc caggtcttta cagggcaggt acctggcatt     360
agatggggca aacttggtga agcccacgcg tccg                                 394
```

```
        <210> 169
        <211> 550
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 169
ctgtgacacc tccgggcagc ccggcacttg ttgctcccac gacctgttgt cattcccttaacccggcttt     60
acccggcttt ccccgtggcc ccccgcctcc tcccggcttc gctccttttc atgtgagcat    120
·ctgggacact gatctctcag accccgctgc tcgggctgga gaatagatgg ttttgtgaaa    180
aattaaacac cgccctgaag aggagccccg ctgggcagcg gcaggagcgc agagtgctgg    240
cccaggtgct gcagaggtgg cgcctccccg gcccgggacg gtagccccgg gcgccaacgg    300
catgacagac tcggcgacag ctaacgggga cgacagggac cccgagatcg agctctttgt    360
gaaggctgga atcgatggag aaagcatcgg caactgtcct ttctctcagc gcctcttcat    420
gatcctctgg ctgaaaggag tcgtgttcaa tgtcaccact gtggatctga aaagaaagcc    480
agctgacctg cgcaacctag cccccggaac gcacccgccc tttctggcct tcaactggta    540
cgtgaagaca                                                           550
```

```
        <210> 170
        <211> 422
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 170
cttggattca gtgatggaca ggaagccagg cctgaagaaa ttggctggtt aaatggctat     60
aatgaaacca caggggaaag gggggacttt ccgggaactt acgtagaata tattggaagg    120
aaaaaaatct cgcctcccac accaaagccc cggccacctc ggcctcttcc tgttgcacca    180
ggttcttcga aaactgaagc agatgttgaa caacaagtgc tctacaagta tagaaagaag    240
ccttcctctt cccaccgtcc ccagacacca cataatggaa aaagcaagaa ttttctgcat    300
aagcaaggcc ttaaaaaaaa aaaagccagc ctctgatggg acttttttcc tgccaaaaat    360
cccactggtc cactgtcgca attttacaa aaggccacga taaaagagta aggcccattt    420
tg                                                                  422
```

```
        <210> 171
        <211> 1042·
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 171
cggacgcgtg gggtcatgga gctggcactg cggcgctctc ccgtcccgcg gtggttgctg        60
ctgctgccgc tgctgctggg cctgaacgca ggagctgtca ttgactggcc cacagaggag       120
ggcaaggaag tatgggatta tgtgacggtc cgcaaggatg cctacatgtt ctggtggctc       180
tattatgcca ccaactcctg caagaacttc tcagaactgc ccctggtcat gtggcttcag       240
ggcggtccag gcggttctag cactggattt ggaaactttg aggaaattgg cccccttgac       300
agtgatctca aaccacggaa aaccacctgg ctccaggctg ccagtctcct atttgtggat       360
aatcccgtgg gcactgggtt cagttatgtg aatggtagtg gtgcctatgc caaggacctg       420
gctatggtgg cttcagacat gatgggtctc ctgaagacct tcttcagttg ccacaaagaa       480
ttccagacag ttccattcta cattttctca gagtcctatg gaggaaaaat ggcagctggc       540
attggtctag agctttataa ggccattcag cgagggacca tcaagtgcaa ctttgcgggg       600
gttgccttgg gtgattcctg gatctcccct gttgattcgg tgctctcctg gggaccttac       660
ctgtacagca tgtctcttct cgaagacaaa ggtctggcag aggtgtctaa ggttgcagag       720
caagtactga atgccgtaaa taaggggctc tacagagagg ccacagagct gtggggggaaa       780
gcagaaatga tcattgaaca ggtaaaaagg ggaaacactc agaggcgagc ctgcttggct       840
ttttctggtg ggtacagggc ccatggttgg tgttgtcaaa cttggagtct acactgaggc       900
tccccacata tctgcaaatg attgcatgct ggataataaa tctcttgggt ctaagcagtg       960
atgtagtggc tccttacaga gtcagaaagc cacccaggcc tgcaagactt gcttgtcctt      1020
cactaaatgt aaaaattcta tt                                              1042
```

```
        <210> 172
        <211> 890
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 172
aaagtagtag gttggtgcaa acgtagtaat aaattggttt ggccctgttt tcatagaact        60
atagaggttg gacctttgtc cccttccaga tgcctacaaa caaactgatg ttttttgattt       120
ttttttcttt ttaaattttg gttgccacta attcttataa aaatcctcac acaaggctgg       180
gctcagtggc tcacacctgt aatcccagca ctttgggagg ctgaggcagg cggatcacga       240
ggtcaggaga tcgagaccat cctggctaac acggtgaaac ccccgtctct actaaaaata       300
caaaaaaatt agccgggcgt ggtggcgggc gcctgtagtc ccagctactc gggaggctga       360
ggcaggagaa tggcgtgaac ccgggaggca gagcttgcag tgagccgaga tagcgccact       420
gcactccagc ctgggcgaca gagcaagact ccatctcaaa aaaaaaaaa agtgataata       480
ctgtaatccc agcactttgg gaggccgagg caggcggatc acgaggtcag gagatcgaga       540
ccatcctggc taacacggtg aaaccccgtc tctactaaaa atacaaaaaa ttagctgggc       600
gtggtggcgg gcacctgtag tcccagctac ctgggaggct gaggcaggag aatggcgtga       660
acccaggagg cggagcttgc agtgagcgga gatcatgcca ctgcacttca gcctgggcga       720
cagagcaaga ctccatctca aaaaacacac acacacacac acacacacaa      780
atagaaaaat aataatagtt ttaagcacct ctaaagtaca gatattgtgc caagcaattt       840
atgtgaattg attagattga taactctaaa aatagtttcc ctaatcaact                 890
```

```
        <210> 173
        <211> 1922
        <212> DNA
        <213> Homo sapiens
```

```
    <400> 173
tttctttctt catccaaaat agtagagatg tctttcccac gatgacctgt gatggtggag        60
atatcttttc ctcggccaac tcctcctcca tcggcttctt tgatgtcatc ttcaatagct       120
tcatcaattg cttcatcaaa ctcatcaaat ctgtagctta tacatttcct tgttcttgtt       180
gacctccttt caaagcaagt ttgctttgga ttttttttgaa tcttttttct tttcttcttg      240
atcttcagaa aagtctggct ctttgtggag gaatgatgtt ttcaatactg gataccaaca       300
tacaccaagc gttctttttcc ttcgttccgg caacgctctt tccttcttta aggcaacatc      360
ccaaatcctg gaaactggtc ctctaatttt tccaacaaga gcaagtttaa tgttgggcaa       420
aaggtggggc aagaacccat cctcccatct ggggatggat catcagagga ggggcgaaag       480
gcagggcagt atggtatcca ctatcgcaag agtcacacag aagaattagc tcaggatggt       540
ttggaaggcc acattttttg catggttcat catcatctgc taggatggct tcttcacttt       600
ccttttcttc ctcctcttct gaagctgcag atgatttttc actgccagac ccttcacttt       660
catcattgct ggaatatttc catctgccac gtgtccgaga accagtccat cgaactttgc       720
ctttgggttt taccttgctt actttagaat ttgtatcttt ctctgatttt ttcaaaattt       780
ccttttttgtc agtttttttgc aaagctgttg actcttcttc cacctcatct tctccttccc     840
ctctttttttt atcagctttc tgatctctga tctcagccac ttttgcagtg ggtctagata       900
ttcttggaga tcttcttaaa gtacgaccca catttgtttt ctcctcttcc tttttctgtct      960
tctcttgctt gttttctggt tctagaactt tgggggggaga atcgggcttc ttttttccgac    1020
ttgatatcct gattgttaat ttgatgccct ctttctgcct ttcagaggtt atctctgtat      1080
tttctgaggc agtggtttct tcttcaggaa ccaacttata tttgaatttg cttttttttgca     1140
tagaacccctt tgtctcagaa ggctcctcta tgccagaggt ctgggcattg tccagattat      1200
ccatttctac ctttgtgaac tcagaatcct cttttagggt ttctaggtct acttttttca       1260
cagactggcc accaacagta cttgtactct ggcattctac cacttctttt tctgaggcta       1320
gtttctcaca gtggtcaatg atattagatg gtggagaagt ttcagctgcc tcaggagagc       1380
caggcttttc tgactctaga gtactctttg gaacttcttc tggtattgga ctcaatcttt       1440
gtgcgtcctt atcaagaaaa gtcttttttgg acttctctaa cttttcaaga cattctagga      1500
ttggtgggcg cttatccttc ttagttttgg gagacttctc ttcacctttc atggtacacg       1560
actcggtgga agataaagca gttttttgaag agagatcttt tgccatctca gaagaatcaa      1620
gagaagtttc catttctgga ggatcgggtt cctctatttg tgcttttttga ctatggatct      1680
ctaagactga tattgaacta tctgcatctt tcctcaaagg ggctgtttct ttctcaagct      1740
cacctgtttt catacttggt tatgacagaa tttaaggact ctgttccatt tccctccgtg      1800
atgatatttc tgtccttagg ggggctatag ctctcttcct ttgtctcata aaactttgtc      1860
tctacttggt tctgtcttaa aatttggagc tacccctttca tcactaactt ctccatttac      1920
ca                                                                      1922
```

```
    <210> 174
    <211> 537
    <212> DNA
    <213> Homo sapiens
```

```
    <400> 174
aaaagcggcg cggctcgttc aagatggcgg agctcgacca gttgcctgac gagagctctt        60
cagcaaaagc ccttgtcagt ttaaaagaag gaagcttatc taacacgtgg aatgaaaagt       120
acagttcttt acagaaaaca cctgtttgga aaggcaggaa tacaagctct gctgtggaaa       180
tgcctttcag aaattcaaaa cgaagtcgac tttttttctga tgaagatgat aggcaaataa       240
atacaaggtc acctaaaaga aaccagaggg ttgcaatggt tccacagaaa tttacagcaa       300
caatgtcaac accagataag aaagcttcac agaagattgg ttttcgatta cgtaatctgc       360
tcaagcttcc taaagcacat aaatggtgta tatacgagtg gttctattca aatatagata       420
aaccactttt tgaaggtgat aatgactttt gtgtatgtct aaaggaatct tttcctaatt       480
tgaaaacaag aaagttaaca agagtagaat ggggaaaaat tcggcggctt atgggaa         537
```

```
        <210> 175
        <211> 659
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(659)
        <223> n = a,t,c or g




        <400> 175
  tctctctttg ccagtaatgt tggaagtgga catttcattg gcctggcagg gtcaggtgct      60
  gctacgggca tttctgtatc agcttatgaa cttaatggct tgttttctgt gctgatgttg     120
  gcctgggtct tcctacccat ctacattgct ggtcaggtca ccacgatgcc agaataccta     180
  cggaagcgct tcggtggcat cagaatcccc atcatcctgg ctgtactcta cctatttatc     240
  tacatcttca ccaagatctc ggtagacatg tatgcgggtg ccatcttcat ccagcagtct     300
  ttgcacctgg atctgtacct ggccatagtt gggctactgg ccatcactgc tgtatacacg     360
  gttgctggtg gcctggctgc tgtgatctac acggatgccc tgcagacgct gatcatgctt     420
  ataggagcgc tcaccttgat gggctacagt ttcgccgcgg ttggtgggat ggaaggactg     480
  aaggagaagt acttcttggc cctggctagc aaccggagtg agaacagcag ctgcgggctg     540
  ccccgggaag atgcctttca tatttttcga gatccgctga catctgatct cccgtggccg     600
  ggggtcctat ttggaatgtc catcccatcc ctctggtact ggngcacgga tcaggtgaa      659




        <210> 176
        <211> 1033
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(1033)
        <223> n = a,t,c or g




        <400> 176
  cccacgcgtc cggatgtgtg ctcacacttg ggggacctga ttggggcttc agaccttggg      60
  ggcctgtccg cagggtctcc tccatccttc ttgatttgcc tgtcattgag gctgcccgct     120
  ctgggcgcca ttccccagcc taacacctct tctcagtctt tccttgcagg tccctggagt     180
  ccaggccttg gggcagtgaa gaaaccgtgg ggaggggcat gagatgccag tccccaaagt     240
  ccttgggagc ccttgtgggc caagtcattg taggacacac cctctcctgg gcattgctga     300
  ggtcacccag tgagcctagg ctcccccctc ctcccatccc cagcctgggg gaaccttcag     360
  cgtctctcct ccctgtaggc cccggctcag cttcccagga acttttgttg gtgggtacta     420
  gtagggtaag gcagttcttc ccatcatgag ggagaccttg ggagactttc attaccaaat     480
  ccattgctgc cccgaccttc ctgggactga tctgggtcac cctggtctcc tgatcttgga     540
  gaagtcaagt tcttatccca gacttgagag gttacaagcc tccaggtctc tggcaaagtg     600
  tggagatgat ggacagccat ttgtacacac accagccagt cccttagcat atctctcttg     660
  gttttgtctc aggtctgcct cagccacctc cctgacgctg tcccactgtg tggatgtggt     720
  gaaggggctt ctggatttta agaagaggag aggtcactca attgggggag cccctgagca     780
  gcgataccag atcatccctg tgtgtgtggc tgcccgactt cctacccggg ctcaggatgt     840
  gctgcagcct cctggccact ggaggggctg accgcctgat ccacctctgg aatgttgtgg     900
  gaagtcgcct ggaggccaac cagaccctgg agggagctgg tggcagcatc accagtgtgg     960
  actttgaccc ctcgggctac caggtttttag cagcaactta caaccaggtt gcccagtttt    1020
  ggaaggtngg gga                                                        1033
```

```
        <210> 177
        <211> 335
        <212> DNA
        <213> Homo sapiens



        <400> 177
gtcaaaaacg atttcctagc aactgtggcc gtgatggaaa actgtttctt tggggacaag        60
cacttcatat catcgcaaaa ctcctgggta agtggagaag attgggaatg gtattttttt       120
ccttgttatt aagctattag aaataaatat gcctttgctg gcacataata gtactttggt       180
acaacaggat atcctatgga gtttaaaaat aagtatttaa aatataacaa atctgtatta       240
gtccattctc atgctactaa taaagatata cccaagactg ggtaatttat aaaggaagga       300
gttttaatgg cctcacagtt ccgtcgacgc gggcg                                  335




        <210> 178
        <211> 556
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(556)
        <223> n = a,t,c or g




        <400> 178
gttcacgtct gcagcagtaa gatgggagct ttgtccacgg agcggctaca gtactacact        60
caggaactgg gggtccggga gcgcagtggc cacagcgtgt ccctcatcga cctctggggc       120
ctccttgttg agtatctcct gtaccaggag gagaaccctg ccaagctgtc tgaccaacag       180
gaggcggtcc gccagggtca gaacccttac cccatttaca ccagtgtcaa cgtccgcacc       240
aacttgagtg gggaagattt tgcagagtgg tgcgagttca cgccctatga ggttggcttc       300
cccaagtacg gggcttatgt tcccaccgag ctcttcggct cagaactctt catgggacga       360
ttgctgcagc tccagcctga accccggatc tgttacctgc aaggtatgtg gggcagcgcc       420
tttgccacca gcctggatga gatcttccta aagaccgccg gctcgggcct cagcttcctg       480
gagtggtaca gaggcagtgt gaatatcaca gacgactgcc agaagcctca gctgcacaac       540
ncctcgacgc gggaat                                                       556




        <210> 179
        <211> 631
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 179
gaatttctgg gtcgtcccac gcgtcccgca aaggatgagg gaaacgatga gggaaaggat        60
gagggaaagg atgagggaaa ggatgaggga aaggatgagg gaaaggatga gggaaaggat       120
gagagaaagg atgagggaaa ggatgaggga aaggatgaga gaaaggatga gggaaaggat       180
gagggaaagg atgagggaaa ggatgaggga aaggatgagg gaaaggatga gggaaaggat       240
gagggaaagg atgagggaaa cgatgaggga aaggatgagg gaaaggatga gggaaaggat       300
gagggaaagg atgagggaaa ggatgaggga aaggatgagg gaaacgatga gggaaacgat       360
gagggaaacg atgagggaaa ggatgaggga aaggatgaga gaaacgatga gggaaaggat       420
gagggaaagg atgagggaaa ggatgaggga aaggatgaga gaaacgatga gggaaaggat       480
gagagaaagg atgagggaaa ggatgaggga aaggatgagg gaaaggatga gggaaaggat       540
gagggaaagg atgagggaaa cgatgaggga aaggatgaga gaaaggatga gggaaaggat       600
gagggaaagg atgagggaaa ggataagtaa g                                      631
```

```
        <210> 180
        <211> 469
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(469)
        <223> n = a,t,c or g
```

```
        <400> 180
ggcggggctc ntttgagacc tgatgaccat cattacgccc agcttggcac gagggggagg        60
acttcagcta cggcctgcag ccctactgcg ggtactcctt ccaggttgtg ggggagatga       120
tccggaaccg ggaggtgctg ccttgccccg atgactgtcc cgcctgggcg tatgccctca       180
tgatcgaggg ctggaacgag ttccccagcc ggagggcccg ctttaaggac atccacagcc       240
ggctccgagc ctggggcaac ctttccaact acaacagctc ggagcagacc tcggggggca       300
gaaacaccac gcagaccagc tccctgagca ccagcccact gtgcaatgtg agcaacgccc       360
cctacgtggg gcccaagcag aaggtcccgc cctttccaca gacccaggtc atccccatga       420
agggccagat cagacccatg gtgcccccgc cgcagctata cgtccccgg               469
```

```
        <210> 181
        <211> 453
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 181
caggaattcc gggcgccacc cacgcgttcg atggatcctg gaagagcgca agcgggtgat        60
gcaggaggcc tgcgccaagt accgggcgag cagcagccgc cgggccgtca cgccccgcca       120
cgtgtcccgt atcttcgtgg aggaccgcca ccgcgtgctc tactgcgagg tgcccaaggc       180
cggctgctcc aattggaagc gggtgctcat ggtgctggcc ggcctggcct cgtccactgc       240
cgacatccag cacaacaccg tccactatgg cagcgctctc aagcgcctgg acaccttcga       300
ccgccagggt atcttgcacc gtctcagcac ctacaccaag atgctctttg tccgcgagcc       360
cttcgagagg ctggtgtccg ccttccgcga caagtttgag cacccccaaca gctactatca       420
cccggtcttc tgcatggcca tactggcccg gta                                    453
```

```
          <210> 182
          <211> 377
          <212> DNA
          <213> Homo sapiens




          <400> 182
cataatgtat agtatttctc ctgccaactc tgaggaaggc caggaacttt atgtctgcac      60
agtcaaggat gatgtgaact tggatacagt acttctccta ccctttttga aagaaatagc     120
agtaagccaa ctggatcaac tgagcccaga ggaacagttg ctggtcaagt gtgctgcaat     180
cattggtcac tccttccata tagatttgct gcagcacctc ctgcctggct gggataaaaa     240
taagctactt caggtcttga gagctcttgt ggatatacat gtgctctgct ggtctgacaa     300
gagccaagag cttcctgctg agcccatatt aatgccttcc tctatcgaca tcattgatgg     360
aaccaaagag aagaaga                                                    377




          <210> 183
          <211> 621
          <212> DNA
          <213> Homo sapiens




          <400> 183
ctcatcctta aagtgacaga gtaaattaac tctaaggccc catccaggac tcaagctgtg      60
tgattttaca aaaatgaaaa ttatattaat aatcccattg taaaatccca aaagaaagtc     120
aagagactag cagaaagaca ggtgggtgat gggatgtcct ggacagagcc tggatcatga     180
ggtccccatg tagtgcttgt actacgcaga tgtttcctct tgagctattt aaaggtgtg      240
gaaaaagcca aagcaatgcc ctctccacgg atactaaaga ctcacctttc cactcagctg     300
ctgccaccgt ctttctggga aaacaactgc aaggtaagat accaacagct ccctgtgaca     360
gaagggaaag taagccaacc aaagcgagtc ctgcagaccc aacgcagag cattcgtgat      420
cacctttgcc tctccactgt ctctgatgct taccagcaaa gagaaaacat aaagttctac     480
attcagcagg acattcacct gaacagtttc aaataggaca tgaaggcagg atccagattg     540
aatgtttgga gggaactaga gacatgggga ggcagtgagt gcagtaagcg tagctgtgaa     600
atgaaggga gaagatggtg g                                                621




          <210> 184
          <211> 415
          <212> DNA
          <213> Homo sapiens




          <400> 184
accgggacga cccacgcgtc cgggaattta attctattat atatgcagac tttctaaaga      60
```

```
agataaagct tttttatggg agaaacgtta ttattgcttc aaacacccaa attgtcttcc        120
taaaatatta gcaagcgccc caaactggaa atgggttaat cttgccaaaa cttactcatt        180
gcttcaccag tggcctgcat tgtacccact aattgcattg gaacttcttg attcaaagta        240
agtcaaatac atttatttgc tcttgtttta ttgtcagttt ttccagtaag gtatgttgcc        300
agaagtattt cctttccttt taacatgaaa gcaattcaat ataatccaaa tgtgtaaatg        360
tatatttata caaacatatc ttctgcattg aagttgtcaa taaagcattg catgt            415
```

<210> 185
<211> 359
<212> DNA
<213> Homo sapiens

<400> 185
```
ggaaaatgat gatttgaggt ttatttgaaa tacaacaatg tccaatagga aaacactgca         60
actttcttca ggtgttgaga aatccaatag agacctctgc ttgtctcctc ctttggcaag        120
agctccaagg ggagagagag gatgggccac cacgatgaat actacaggct gcggggaagg        180
ataaccctag tccagaccat tcctacaaaa gaaatgggga atccgaaagg aaaaggaaga        240
aatctcacta gcacatgtca aagagccagg agaggcacaa ttcaccaagc agaggaagaa        300
atagtgaccg cagcgggggc cggtgcagcc gcagtgataa cggtcggagc cgttacagg         359
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<210> 186
<211> 1616
<212> DNA
<213> Homo sapiens

<400> 186
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aggggcctgc gggagaccca gggtcggacc cataggagtc ctgtcgtcag gacctccttg        120
atcggtcttc tgcttgggtt ctcggtgaag gaggagcttc ggggtgtcgg ctgggctgcg        180
cggactcctc ttgggatccg atgatggatc ccacccggtg atcgggaatg gggttacaat        240
gcagtgaggc ggaaaggctc tcgccggggc acagaaagat ccccagggcc gcaaggcgtg        300
ctgtcgcctg caaaggcact gacccacgag cccactgcct ccctccttcc tgggtggagc        360
aggggcctgc cttcatctcc aaggcccggg ggctccggca tctcgacgcg gcttccggcg        420
acacgggcaa agagagacag aggctagtcc gagccggagc cagtgtgacc acacgtggca        480
ctgacgtccc ccaagagcac atgcagtgag cctgtgtctc tgaggccgta gtgggcgacg        540
acgagacgga cagtgatgtc caggcctgcg cccgggggcc actggagacc tgccctcaa        600
agcggaggaa acgccaagct cacctgaaaa cctgcgagac agggcctgtg cacgagtcca        660
gtactcctac ttcgccaagt ctcagggacc catccccgag caacggtggc ggcgcagaga        720
agagcacggc gccggcgcag gtgcagagag acaggaggct gatggggga agttgaggca        780
cctggggcag agaaaaaaat gcattgccaa gaggtttctg ggtcatctac tgacgaaaat        840
gtcttcccat cagcccttgc gctggtcccc agggaccctg gcatccgtcg ttggcgccca        900
gggtgcgcgt cgggccacta ggggtacccc aactcggaca gaaggcccat gagttgaatt        960
tgaagtttgt gggaatagag gtgaggcacc aggggcagaa aaaaacagg agacctcgcc       1020
tcagacaagc ggggcctggg tcccccatgg atgaaagtgc cttcccatta tgctgtaccc       1080
tgggcagagt ggacagtgac gaccctggtt cgagcccagg gtgcgcttcg gaccgcttg        1140
cggttaccag aaagcgaaca aatggtccat gagcggaagg tgaggcacct gaggcagaga       1200
aagtaaagaa acgcgccgcc gagaagcagt gcctgggtcc ctcacggagg aaattgtctt       1260
ctccttagcc cgttcgcttg gcagtgaggt ccctggcgtc cctggtttga tcccagggta       1320
```

80

```
cgcctcgggc cactagtgtt accccaaggt gggcagaaag cccataaggg gaaggcgagg   1380
cacctggggc agagaaaaaa aaaaacttcg ccgcaaagaa gcgcggcctg attccccacg   1440
gacgaaagtg tcttcccatc agtccctgca ctgggacccg gggaccctgg tgtccctggt   1500
tcgagctcag ggtgtgcctc agccgctacg tgcaccccaa ggggagcttt gggagcccaa   1560
aagccaataa gggaaagtaa ttttttaaggc ccccagtggt gaggcccctg tcacag        1616
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         <210> 187
         <211> 916
         <212> DNA
         <213> Homo sapiens

         <400> 187
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ttttgataag aggcaacatg aagcaagaat ccagcaaatg gagaatgaaa ttcactattt    60
gcaagaaaat ctaaaaagta tggaggaaat ccaaggcctt acagatctcc aacttcagga   120
agctgatgaa gagaaggaga gaattctggc ccaactccga gagttagaga aaaagaagaa   180
acttgaagat gccaaatctc aggagcaagt ttttggttta gataaagaac tgaagaaact   240
aaagaaagcc gtggccacct ctgataagct agccacagct gagctcacca ttgccaaaga   300
ccagctgaag tcccttcatg gaactgttat gaaaattaac caggagcgag cagaggagtt   360
gcaggaagca gagaggttca gcagaaaggc agcacaagca gccagagatc tcacccgagc   420
agaagctgag atcgaactcc tgcagaatct cctcaggcag aaggggagc agtttcgact   480
tgagatggag aaaacaggtg taggtactgg agcaaactca caggtcctag aaattgagaa   540
actgaatgag acaatggaac gacaaaggac agagattgca aggctgcaga atgtactata   600
cctcactgga agtgacaaca aaggaggctt tgaaaatgtt ttagaagaaa ttgctgaact   660
tcgacgtgaa ggttcttatc agaatgatta cataagcagc atggcagatc ctttcaaaag   720
acgaggctat tggtacttta tgccaccacc accatcatca aaagtttcca gccatagttc   780
ccaggccacc aaggactctg gtgttggcct taagtactca gcctcaactc ctgttagaaa   840
accacgccct gggcagcagg atgggaagga aggcagtcaa cctccccctg cctcaggata   900
ctgggtttat tctccc                                                   916
```


         <210> 188
         <211> 1080
         <212> DNA
         <213> Homo sapiens

         <400> 188
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cctctactgc agcttcatca tcagattctt ctttctgttc ttggggtgct tcttcttcct    60
ccatgggctc ctcaacagtt tcagtcttgc tgctccatac ataaatagga agtttatga   120
actgtgaata ttttttgacg agattttaa ttgtatccaa ttcaaggtaa tcagatgctt   180
cttctttaa gacaagggta attgtcgttc ccgtcctag agtgtttcct cttgggtcag   240
caattacaga aaaattcattg gagtcagact cccagattgg ccagtttggt gtcggtttct   300
attccgcctt ccttgtagca gataaggtta ttgtcacttc aaaacacaac aacgataccc   360
agcacatctg ggagtctgac tccaatgaat tttctgtaat tgctgaccca agaggaaaca   420
ctctaggacg gggaacgaca attacccttg tcttaaaaga agaagcatct gattaccttg   480
aattggatac aattaaaaat ctcgtcaaaa aatattcaca gttcataaac tttcctattt   540
atgtatggag cagcaagact gaaactgttg aggagcccat ggaggaagaa gaagcagcca   600
aagaagagaa agaagaatct gatgatgaag ctgcagtaga ggaagaagaa gaagaaaaga   660
aaccaaagac taaaaaagtt gaaaaaactg tctgggactg ggaacttatg aatgatatca   720
aaccaatatg gcagagacca tcaaaagaag tagaagaaga tgaatacaaa gctttctaca   780
```

```
aatcattttc aaaggaaagt gatgaccecca tggcttatat tcactttact gctgaagggg    840
aagttacctt caaatcaatt ttatttgtac ccacatctgc tccacgtggt ctgtttgacg    900
aatatggatc taaaaagagc gattacatta agctctatgt gcgccgtgta ttcatcacag    960
acgacttcca tgatatgatg cctaaatacc tcaattttgt caagggtgtg gtggactcag   1020
atgatctcccc cttgaatgtt tcccgcgaga ctcttcagca acataaactg cttaaggtga   1080
```

<210> 189
<211> 1344
<212> DNA
<213> Homo sapiens

<400> 189
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tttttttttt ttgctgctgg gtcgggtttt atttcaaatg cagccacaga ggcggtttct    60
gcacaggtac gtgatccgac tccacaagct cccaccaggg gctccccatg acccgcaatg   120
acgctgtgtg gggtcaaagg aaaacaggcc acagccaggc ccctcgatgg acgcaggcag   180
gggaccagga atgcggccca cgcaggggga tcgggaatca ggcggaaggt gcaggtttgc   240
agctggcggg aggagccagc atgccccaat ctctaaaata ttccccggtag aaaaatagac   300
atttccctcc aaagcagatt cctgggggctg gagggtccct ccaaggccag gggtccgggt   360
gattccagag catccacgct ctgcgctgaa ggcactgaac ctgccatcac tgtcacagcc   420
gtcaccggcc aaggagggtc tggaggaggg aaggggccct tgcgaggctc tggtgctggt   480
gatcccggcc cccaccaccg gaggagctga aagcccttgc tcagccgctg ccctgctggt   540
gaacccggcc cccaccgccg gaggagctgc accctgtgtg gtctgaggca gccctgcact   600
gggcagcggc cccgccccgc gctgaaccca ctaggagagc agctgcagca cctgtcggat   660
gcgctgggcc ctccccggca gggggggatc agagccctcc tcatccagct cccgcatcag   720
ggcttccgcc ttctgcaccg tcagctctcg ggcccggccc tgcagcccct ccaggtaggc   780
cagcagggtg gagaagtgct catcgggaac cttgtcactg tcatacatgt gcagcaggag   840
ccacgtctgc ctcgtcttct gaaacctcca gttcttgtgc ttttgggccc atctgcagag   900
gtagtccagg gccagttcgg ccccccgagcg cctggcaggc gggtgctggg ccacaaggcc   960
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ttcgcccttg gagccggctc cttcgccact tggtgcagcc tcagggccca gcagtggccc   1140
ctctgctgac gccttcttca gctttttgtt cttttctct gtcacttcag gaacttttct   1200
cttctgtttt gccatcctgc gcccacctgc gcccacgtcg cccacctaag cgtgaacagc   1260
tgcgtcgcgg acgccgcctt ccggcaggga cccgcggacg cgtgggtcga cccggcaaaa   1320
cgggtccaac ctagggcgtc gagg                                         1344
```

<210> 190
<211> 550
<212> DNA
<213> Homo sapiens

<400> 190
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cccggaccca cgccgccccc gcgccacggc tctcccccac accgccttat tcgggtcgag    60
accccggggc ccccggcgcc gcctgctgat gagcggatct ccggaccccc cgccagcagc   120
gataggctag ctatcctaga agactatgcg gacccgtttg atgttcagga gactggcgaa   180
ggctcagcag gagcttcagg agccccagag aaggtccctg aaaatgatgg ctacatggag   240
ccctatgagg ctcaaaagat gatggccgag atccggggct ccaaggagac agcaactcag   300
cccttgcctc tgtatgacac accctatgag ccagaggagg atggggccac cccggaaggt   360
```

```
gagggggccc cctggccccg ggagtcccgc ctgccagagg atgatgagag gcccctgag    420
gagtatgacc agccctggga gtggaagaag gagcggattt ccaaagcctt tgcagttgac    480
attaaggtca tcaaagacct accttggcct ccacctgtgg gacagctgga cagcagcccc    540
tccctgcctg                                                           550
```

```
        <210> 191
        <211> 562
        <212> DNA
        <213> Homo sapiens
```

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        <400> 191
caatttttt ctcttttctt aaggtatcag atacacaccg gacttcaaca ttctatcata      60
agacctaccc aacccaactg tttacctctg gacaatgcca ccctacctca gaaactgaag     120
gaggttggat attcaacgca tatggtcgga aaatggcact tgggttttta cagaaaagaa     180
tgcatgccca ccagaagagg atttgatacc tttttggtt cccttttggg aagtggggat      240
tactatacac actacaaatg tgacagtcct gggatgtgtg ctatgactt gtatgaaaac      300
gacaatgctg cctgggacta tgacaatggc atatactcca cacagatgta cactcagaga      360
gtacagcaaa tcttagcttc ccataacccc acaaagccta tatttttata tattgcctat     420
caagctgttc attcaccact gcaagctcct ggcaggtatt tcgaacacta ccgatccatt     480
atcaacataa acaggaggag atatgctgcc atgctttcct gcttagatga agcaatcaac     540
aacgtgacat tggctctaaa ag                                             562
```

```
        <210> 192
        <211> 2171
        <212> DNA
        <213> Homo sapiens
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        <400> 192
cacgcgtccg gaaaggaaga ggcggtgaga ggctgcaaag ccccttgcgt gttccgcaga      60
aaccagaaag acctcccctt ccacccaagc ctcagttcct aaactcaggg gcatatcctc     120
aaaaacctct tagaaatcag ggagtggtga ggacactgtc cagctctgcc caagaggaca     180
tcatccggtg gtttaaagag gagcagctac cacttcgagc gggctaccag aaaacctcag     240
acaccatagc cccctggttc catggaattc tcacactcaa gaaagcaaat gaacttcttc      300
tgagcacagg catgcccggc agttttctca tccgagtcag tgaaaggatc aaaggctatg      360
ccctgtccta tctgtcggag gacggctgta acatttcct catcgatgcc tctgcagacg       420
cctacagctt cctgggcgtg gaccagctac agcatgccac cttggcggat ttggtggaat      480
atcacaagga ggaacccatc acttccctgg ggaaggagct ccttctctat ccctgtggtc      540
agcaggacca gctgcctgac tacctggagc tgtttgagtg acagcctcca tcagggtcat      600
cctacagcct ccaagcgggc tttcccctgg acaaatgcca ctgcaacatt tatgtgtgaa      660
gccaaaatca ccctgcagca gagccaatac tgatcaactg aaagtatcca tggagtcctc      720
attgacacct ctttctgca caaatactgg aattcaatgt caagagaaa tgacctctgc        780
tcaaaaggga gaagagtctc aatttcagca agtacctgtc atgaaggta tgaccttaat       840
gatgtacata aaataaaaca aatgaagaaa tggaaaactt ttagaaatta aggtgtactt      900
gaaaacgagt atctatcata tgacccctgc actccctctg tatcatctca ggaggtttca      960
ggggcctgtt gacatgaagt ttcgaagttt catgttggct ttggaatggt agcaaaagcc     1020
tttcctggct gagatgatgc ttaaaacaca cctcacttat tgtacatgtt ggaaccagga     1080
catgagagac atagaaaaac agaagtcatg aatgtaaatt gaatgagagg cttaacatgc     1140
atgaaaatac agatggacct gcaggaaagt gagcaaacat cgctgagttt gttttcttgt     1200
```

```
tcgggagaat ggggccgggg ctggcctggc ctcccctgga tatactctat agtgcaccaa    1260
aaggataaag catctgtaca tgtatttttt tattttttat cagaagtgct tagacaagaa    1320
cagaataagc aggctgtttg gatgctactt gtggttgaat tgtgttcccc caaaatatat    1380
ggtgaagtct taacccccat ccccgtgaat gggaccttgt ttggaaatag ggtctttgca    1440
gatatagtca agatgaggtc acattggatt agggtgggcc ccaaatccaa tgactggcat    1500
ccttaggaga agagagagtt ttggtaatag acacaaatgc agtgggaaga agaccagggg    1560
acaagaggca agttggagtg atgcagccgg aagggaaggg acaccaagga tctccggcca    1620
ccagcagaag ccagcagaga ggcatgggac aggttcccca caagccttag aaggaagcat    1680
ggccctgact tcagaattcc agactccaga actggaagaa taaatgtctg ttgtttttaag   1740
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gtcgtttatg taattacata acctgacaca caagatcgac ccattcactg ctgcccagtc    1860
caccatttc ataatgaagt agaaatggga ggtaagaaaa acattccagc cagttctgtt    1920
tagccctggg acacatattt gtcccgtcag gaatcttatg ccctcctgga acccccgccc    1980
acctcagtcc agtcccagtc aggcgaacgg cctctggaca gggactgagg tggctttgag    2040
ccactggaga tcattttttct tggaggatgg agattggcta gtacctctgg cctaactgtg    2100
taggtcaata ctcttttaca ttgccttcta ataaaagcag aatgatacag cagtgttgtt    2160
aaaaaaaaaa a                                                         2171
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<210> 193
<211> 2095
<212> DNA
<213> Homo sapiens

<400> 193

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aaacgcgccg actacagagg ctggacgtaa gcttatcggt ggcgcgcgtg cgcagcgccg     120
gcccgagttg ccaaaacaaa ggggatttgg tgatggaggc tttgttagaa ggaatacaaa     180
atcgagggca tggtggggga ttttttgacat cttgtgaagc agaactacag gagctcatga    240
aacagattga cataatggtg gctcataaaa aatctgaatg ggaaggacgt acacatgctc     300
tagaaacttg cttgaaaatc cgtgaacagg aacttaagag tcttaggagt cagttggatg     360
tgacacataa ggaggttgga atgttgcatc agcaggtaga agaacatgaa aaaatcaagc     420
aagagatgac catggaatat aagcaggagt tgaagaaact acatgaagaa ttatgcatac     480
tgaagagaag ctatgaaaag cttcagaaaa agcaaatgag ggaattcaga ggaaatacca     540
aaaatcacag ggaagatcgg tctgaaattg agaggttaac tgcaaaaata gaggaattcc     600
gtcagaaatc gctggactgg gagaagcaac gcttgattta tcagcaacag gtatcttcac     660
tggaggcaca aaggaaggct ctggctgaac aatcagagat aattcaggct cagcttgtca     720
atcggaaaca gaaattagag tctgtggaac tttctagcca atcagaaatt caacacttaa     780
gcagtaaact ggagcgggct aatgacacta tctgtgccaa tgagttggaa atagagcgcc     840
tcaccatgag ggtcaatgac ttggttggaa ccagtatgac tgtcctacag gagcagcagc     900
aaaaagaaga aaaattgagg gaatctgaaa aactattaga ggctctgcag gaagaaaaga     960
gagaattgaa ggcagctctt cagtctcaag aaaatctcat acatgaggcc agaatacaaa    1020
aggagaagtt acaagaaaaa gtaaaggcaa ctaacactca acatgctgta gaagctataa    1080
gtttggaatc tgtgagtgca acgtgtaaac agctgagcca agaactaatg gaaaaatatg    1140
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tttctgaaat ggtgatgaaa ttggaattgg gtttacatga gtgttccttg cctgtatctc    1500
cccttggttc aatagctacc agatttttgg aagaggagga actgaggtct catcacattc    1560
tagagcgctt ggatgcccat attgaagaac taaaaagaga gagtgaaaag acagtgagac    1620
aattcacagc cttaaagtag cctcttaaaa aaatcacaat cttggaaata aaaataaaca    1680
ccaaagagtt actgtcatct gaagtagcag ctctttaaaa acatgaagag ataaaattat    1740
aaaaatgata catctaaagc agtggtgaag aaagctgaaa aactgatact tttgataggc    1800
attttctctg cactggtttt tttaaaggac ttcttccagc aataagttga aagaataaac    1860
cactttgcta gactttttc tcatacgaat atttattatc ataaagtgat acttaccttg    1920
```

84

```
ctgacttaaa tgtgaatagc tatgtactaa ttgaaataag gattttatga tacatgttga    1980
aaataaagta actgcaggaa ctttctttag gggaaatgtg tagaagcatg gatttagggg    2040
tcaaacatac ctggatcgat agactggttt tgccacttac cagccaacgg ggctt         2095
```

<210> 194
<211> 1051
<212> DNA
<213> Homo sapiens

<400> 194
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gagaccttgt cttaaaaaaa taaaatgctg tcagaataaa aagcagtcaa cagaaatgaa     60
acccttataa gagacaaata aatgtgggca attattttct gcaaaatgcc ctccaagccc    120
ctgggcgcca ttgccttctg taataggaca tcacctgaac aggctttctg ggctggagcc    180
aaggaccctc cctgactccc acctcccttt ctgccttgta ccccagccag gtggaagaga    240
ccggagtggt gctgtccctg gagcaaacgg agcaacactc tcgcagaccc attcagcggg    300
gcgcccctc tcagaaggac accctaacc ctggggacag ccttgacacc cctggcccc    360
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agctacccag ggcctaccac agacctctgg gggctgtccc ccggccccgt gctcggagct    780
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gggctcggaa gaggaccctg gcccagagct caaaggacga ggacgaggga gtggagctgc    960
tgggagtgag acctcccaaa aggtccccca gcccagaaca cgaaaacttt ctgctctttc   1020
ctctcagcct gagtttcctt ctgacaggag g                                  1051
```

<210> 195
<211> 423
<212> DNA
<213> Homo sapiens

<400> 195
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gtgaactcca agactgtttt gatgttcatg atgcatcttg ggaagagcag atattctggg     60
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ttaaaggtgg agttccacca cagccacgag ccgcgcatac gtgtgcagtt cttggaaata    180
agggttatat ctttggcgga cgtgttctgc aaactaggat gaatgatttg cactatctaa    240
acctagacac ctggacttgg tctggaagga ttactattaa tggagaaagc ccaaaacatc    300
ggtcatggca tactttaaca cctatagctg atgataaact tttcctatgt ggtggactaa    360
atgcatataa tatgccatta agtgatggtt ggattcataa tgtcacaaca cattgttgga    420
aac                                                                  423
```

```
        <210> 196
        <211> 411
        <212> DNA
        <213> Homo sapiens




        <400> 196
tttttttttt ttgaggacaa ggtctcactc tgtcacccca aggtgggagt gcagtgacga    60
catcacagct cactggcagc ctcaaccctg gggttcaagt gatcctctca ccttcagcct   120
ccccaagtag ttgtgcctcc taggcacaca acactatgcc ccggcaaatt ttttgtatt    180
ttgtattttt tgtagaaaca ggatttcgcc atgttggcca ggctggtctc gaacaccctg   240
ggctcaactg atccgcctgc ctcggcctcc caaagtgctg ggattacagg tgtgagccac   300
cctgctcaac caggttttat tatttaagtt agttaaactt tggatagatt gtataatata   360
tagtttaatg taatcatgct catattttt aaataaataa aacactatac t             411




        <210> 197
        <211> 751
        <212> DNA
        <213> Homo sapiens




        <400> 197
cccacgggaa gggcaggtga agcaggggct gctgggggat tgctggttcc tgtgtgcctg    60
cgccgcgctg cagaagagca ggcacctcct ggaccaggtc attcctccgg gacagccgag   120
ctgggccgac caggagtacc ggggctcctt cacctgtcgc atttggcagt ttggacgctg   180
ggtggaggtg accacagatg accgcctgcc gtgccttgca gggagactct gtttctcccg   240
ctgccagagg gaggatgtgt tctggctccc cttactggaa aaggtctacg ccaaggtcca   300
tgggtcctac gagcacctgt gggccgggca ggtggcggat gccctggtgg acctgaccgg   360
cggcctggca gaaagatgga acctgaaggg cgtagcagga agcggaggcc agcaggacag   420
gccaggccgc tgggagcaca ggacttgtcg gcagctgctc acctgaagg accagtgtct    480
gatcagctgc tgcgtgctca gccccagagc aggtgaggca cgtggccagc atgggagggc   540
tgcagccagc gtgccccca ctgccaggcc tcaggcacac tgtagctttt tatgtgactg    600
gctacacagc cctgtcagga ctaagtggga agaagtaagc ttgttctcaa gggtggtgtc   660
ctcagtttgt gaccttcccc tgctgtcctc ttccagaggg acgtggccct tctctcccct   720
gaccagtcct ttccactagt gcgaggcagg g                                  751




        <210> 198
        <211> 636
        <212> DNA
        <213> Homo sapiens




        <400> 198
gggccgagtg tctggaggcc tctattgccc gatatgccca ccgtgtcgcc aatagccgtt    60
ataccttga cggtgaaacc gtgacgcttt cgccaagtca gggcgttaac cagctgcacg    120
gcgggccgga agggttcgac aaacgtcgct ggcagattgt gaaccagaac gatcgtcagg   180
tgctgtttgc cctgagttca gatgatggtg atcagggctt cccgggtaat ctcggcgcga   240
```

86

```
cggtgcaata tcgtctgacc gacgataacc gtatctccat tacttatcgc gccacagttg    300
ataaaccttg cccggtgaat atgactaatc acgtctattt caatcttgac ggcgagcagt    360
ctgacgtgcg caatcacaag ttgcagattc tggcggacga atatctgccg gttgatgaag    420
gcggcattcc gcacgacggc ctgaaatctg tcgccggaac gtcttttgat ttccgcagcg    480
ccaaaatcat cgccagtgag tttcttgccg acgacgatca gcgcaaagtg aaaggttacg    540
atcacgcatt cttgttacag gccaaaggcg atggcaagaa agtggcggcg catgtctggt    600
cagcagatga aaaattgcag ctgaaggtct acacca                             636
```

```
    <210> 199
    <211> 690
    <212> DNA
    <213> Homo sapiens
```

```
    <400> 199
aaagtggcag tgtttcttct gaaattctca ggcagtcaga ctgtcttagg caaatcttga     60
taaaatagcc cttatccagg tttttatcta aggaatccca agaagactgg ggaatggaga    120
gacagtcaag ggttatgtca gaaaaggatg agtatcagtt tcaacatcag ggagcggtgg    180
agctgcttgt cttcaatttt ttgctcatcc ttaccatttt gacaatctgg ttatttaaaa    240
atcatcgatt ccgcttcttg catgaaactg gaggagcaat ggtgtatgac aagccgccga    300
aatttgccat gtcacgagag caaatgtcac agtcatgttc tcacacggca cataatgcaa    360
gtctgttgac agatgcgggt ccattgtcat gtggggagtc gagggcgagc tgtttgtttt    420
tgtaacgatg ttgggaagtg atggctctgc agtcacaaag agcagccttc tctcactggc    480
tgcaccgatg aacattacga agttctagaa caaacatcac ttcaaaatgc ctggagtaat    540
tcctcttata tcaactaatt tcaagaagaa aacctgcaga aactaacccc acccctctca    600
acgagaatat tgtgtccacg tcctctttac ttatacgacc cgtctcttat tctcttataa    660
cacaacgtca taactaaacg agcacaacac                                     690
```

```
    <210> 200
    <211> 433
    <212> DNA
    <213> Homo sapiens
```

```
    <400> 200
gtgactccaa ggaaccaaga ctgcagcagc tgggcctcct ggaggaggaa cagctgagag     60
gccttggatt ccgacagact cgaggataca agagcttagc agggtgtctt ggccatggtc    120
ccctggtgct gcaactcctc tccttcacgc tcttggctgg gctccttgtc caagtgtcca    180
aggtccccag ctccataagt caggaacaat ccaggcaaga cgcgatctac cagaacctga    240
cccagcttaa agctgcagtg ggtgagctct cagagaaatc caagctgcag gagatctacc    300
aggagctgac ccagctgaag gctgcagtgg gtgagcttcc agagaaatct aagctgcagg    360
agatctacca ggagctgacc tggctgaagg ctgcagtggg tgagcttcca gagaaatcta    420
agatgcagga gag                                                      433
```

```
    <210> 201
    <211> 782
```

87

```
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(782)
<223> n = a,t,c or g
```

```
<400> 201
gaagaagggg aaaagaggct ccaggcccct tctccaatca ctccctgcca cccttctcc    60
tttggattcc ttggctgctt tagcaggtct tcctagaggc taactttgat ctttcttgct   120
gcagtttctt ttcgggagag ctagtcagtc ccacagagtg gtatccctag aagggagaag   180
taaggattgc cctcttcttt aaaatgaaag ccagctattt ttcacgccct ttaactgcag    240
gtctgctcta ttttctttc tctctctgga gctgagagtc agagggccct tctcctcctc     300
ctttcagccc ccaacactaa gctgatggat tgataaatac ctcagcccct cgcctttctc    360
aacccacctg gcaagtcttc ttaggatctg atcccagttt tctggaagca atcctacccc    420
agcccattct tcccagagtc gagccttaat ccttctcact tctcagtgtc agagcagaaa    480
tgaatcctgg ggttgactgt gtccattcgg gttattagca gctaagaagc ccagacgagt    540
agtgtgagct gccttgggag cctcagtgag ggcactggga ctggcctcac tctcttgccc    600
ccagcctagt gggctttctc ctctgtctct ccggtggccc caggcaatcg actgcatcac    660
gcanggacgt gagttggagc ggccacgtgc ctgcccacca gaggtctacg ccatcatgcc    720
gggctgctgg gcagcggagc cccagcaacg ccacagcatc aaggatgtgc acgcccgctg    780
ca                                                                   782
```

```
<210> 202
<211> 714
<212> DNA
<213> Homo sapiens
```

```
<400> 202
ttcgagaccc tatccatgag gggaattcct cacatgctgg ctttggggcc acagcagctg    60
ctggcccagg atgaggaggg ggacacgctc cttcacctgt ttgcggctcg ggggctgcgc   120
tgggcggcat atgctgcggc tgaggtgctc caggtgtacc ggcgtcttga cattcgtgag   180
cataagggca agaccccctct cctggtggcg gctgctgcca accagcccct gattgtggag   240
gatctgttga acctgggagc agagcccaat gccgctgacc atcagggacg ttcggtcttg   300
cacgtggccg ctacctacgg gctcccagga gttctcttgg ctgtgcttaa ctctggggtc   360
caggttgacc tggaagccag agacttcgag ggcctcaccc cgctccacac ggccatcctg    420
gcccttaacg ttgctatgcg cccttccgac ctctgtcccc gggtgctgag cacacaggcc    480
cgagacaggc tggattgtgt ccacatgttg ctgcaaatgg gtgctaatca caccatccag    540
gtgagcgggg atgtgggcgg tcagaccctg ggagattgtg tggaatgggg ccacttggat    600
gtccgggagc tccaggcaaa tgctgacttt gcctcttcct tgctgcgtgc ccttgaacat    660
gttacttcac ttctctgtgc cttaagggtt ttttgcttgt ttctttgtca gtta           714
```

```
<210> 203
<211> 477
<212> DNA
<213> Homo sapiens
```

```
        <400> 203
cggacgcgtg ggcggacgcg tgggtggggga ccaagatggc ggaccttgat tcgcctccga        60
agctgtcagg ggtgcagcag ccgtctgagg gggtgggagg tggccgctgc tccgaaatct       120
ccgctgagct cattcgctcc ctgacagagc tgcaggagct ggaggctgta tacgaacggc       180
tctgcggcga ggagaaagtg gtggagagag agctggatgc tcttttggaa cagcaaaaca       240
ccattgaaag taagatggtc actctccacc gaatgggtcc taatctgcag ctgattgagg       300
gagatgcaaa gcagctggct ggaatgatca cctttacctg caacctggct gagaatgtgt       360
ccagcaaagt tcgtcagctt gacctggcca agaaccgcct ctatcaggcc attcagagag       420
ctgatgacat cttggacctg aagttctgca tggatggagt tcagactgct ttgagga        477
```

```
        <210> 204
        <211> 706
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 204
gcggtggaat tccgggttcc ccgttctggt tcggcatatc tctacagcta tgtcactgtg        60
ggtgaactct gggccttcac cactggctgg aacctcatcc tctcctatgt cattggtaca       120
gccagtgtgg cccgggcctg gagctctgct tttgacaacc tgattgggaa ccacatctct       180
aagactctgc aggggtccat tgcactgcac gtgccccatg tccttgcaga atatccagat       240
ttctttgctt tgggcctcgt gttgctgctc actggattgt tggctctcgg ggctagtgag       300
tcggccctgg ttaccaaagt gttcacaggc gtgaaccttt tggttcttgg gttcgtcatg       360
atctctggct tcgttaaggg ggacgtgcac aactggaagc tcacagaaga ggactacgaa       420
ttggccatgg ctgaactcaa tgacacctat agcttgggtc ctctgggctc tggaggattt       480
gtgcctttcg gcttcgaggg aattctccgt ggagcagcga cctgtttcta tgcatttgtt       540
ggtttcgact gtattgctac cactggagaa gaagcccaga atccccagcg ttccatcccg       600
atgggcattg ggatctcact gtctgtctgc tttttggcgg attttgctgt ctcttctgca       660
ctcaccctga tgatgcctta ctaccagctt cagcctgaga gccctg                     706
```

```
        <210> 205
        <211> 852
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 205
ggcttccatc ctaatacgac tcactatagg gctcgagcgg ccgcccgggc aggtgctggg        60
tcgtttgtgg gcgaagtaag tgctgtagat aaagactttg ggccaaatgg agaagtaagg       120
tattcttttg aaatggtgca gccagatttt gagttgcatg ccatcagtgg ggaaattaca       180
aatactcatc agtttgacag ggagtctctt atgaggcgga gagggactgc tgtgtttagc       240
tttacagtca tagcaacaga tcaggggatc cctcagcctc tcaaggatca ggccactgta       300
catgtttaca tgaaggatat aaatgataat gctcccaaat ttttaaaaga cttttaccaa       360
gctacaatat cagaatcagc agccaatctg acacaagtgt taagagtatc tgcctcagat       420
gttgatgaag gtaataatgg acttattcac tattctataa taaaaggaaa tgaagaaaga       480.
cagtttgcta tagacagtac ctctggtcag gtaacactaa ttggcaaatt agactatgaa       540
```

```
gcaacacctg cctattccct tgtaattcaa gcagtggatt cagggacaat ccccctcaat    600
tcaacgtgta ctttaaatat tgatatttta gatgaaaatg acaataccccc tttctttccc   660
taaatcaaca cttctttgtt gatgttttgg aaaacatgag aattggtgaa ctcggggcct    720
ctggtactgc aactgattcc cgattcaggt gacattgctg atttatatta caagtttact    780
gggactaaac acccccccgg aacttttagc attagcccca aacacttggg agtatttttc    840
ttggcccaaa aa                                                         852
```

```
<210> 206
<211> 361
<212> DNA
<213> Homo sapiens
```

```
<400> 206
ctggtgattg ctatgacctg tatggagggg agaagtttgc cactttggct gagttggtcc    60
agtattacat ggaacatcat gggcaattaa aagagaagaa tggagatgtt attgagctta   120
aaaatcctct gaactgtgca gatcctactt ctcaaaggtg gtttcatgga cacctctctg   180
gaaagaagc agagaaattg ttaactgaaa aaggaaagca tagtagcttt cttgtacgag    240
agagccagag ccaccctgga gattttgttc tctccgtgtg caccggtgat gacaaaggag    300
agagcaatga cggcaagtct aaagtgactc atgtcatgat tcactgtcag gaactgaaat    360
c                                                                     361
```

```
<210> 207
<211> 2483
<212> DNA
<213> Homo sapiens
```

```
<400> 207
ataaaatgga catagtagta ggacttacct cccagggctg tggttataga ggttttgtaa    60
gaattaaatg acatcatcca tgtaaagcat atagcagaat gcctggcaca tagatgccct   120
tagtgaattt ttgctgttgt tgtgattctt ttgggagcag tcatagtaac atattctcat   180
atgttggtat gttctttcat attgcattgt cttatgaata gattctggaa accaaaatgg    240
aggaaatgat gataagacta agaatgctga gaggaactat ttaaatgttt tacctgggga   300
attttatatt acacggcatt ctaatctctc agaaatccat gttgctttcc atctctgtgt    360
ggatgaccat gtgaaatcgg gaaacatcac tgctcgtgat cctgccatta tgggactccg    420
aaatatactc aaagtttgct gtacccatga catcacaaca ataagcattc ctctcttgct    480
ggtacatgat atgtcagagg aaatgactat accctggtgc ttaaggagag cggaacttgt    540
gttcaagtgt gtcaaaggtt tcatgatgga aatggcttca tgggatggag gaatttctag    600
gacagtgcaa tttctagtac cacagagtat ttctgaagaa atgttttatc aacttagtaa    660
catgcttccc cagatcttcc gagtatcatc aacactcact ctgacatcca agcactaaac    720
ccttatagat tgacatgctg gcagaagatg attgttaaac tctccaggaa cttgtgctat    780
gctgggaatc tgtcaagcaa aagatgccca gaaagagaac ttgcagctca atccacaaat    840
caagatacat gtgtgtgaaa cccattccaa aaatttatat actggcacaa actggtggat    900
caaccccctaa cttaaacact taaagtctct ttatgaattt ctcttttttt cttctctgtg    960
ttacctgtgg aatattaggt aatctaaaac tttttatttta ttcacacagg gacacttggg   1020
gggaaaggga aacttgatta tatttacatg ggagggcatt tgacttttt caaggagggc     1080
ttggacttcg tcttcaggtg gcaatcctta attaaacata caaacaaaat tttccttta     1140
ctttctttgc caaaacaaaa tgtaaaagca ctgaaatata cattgcaagt acaaatttcc    1200
tgtgaaaatc tttttataga aacacaaatg tataagacaa atgtgcttgt ctttttaaat   1260
```

```
tctcctgttt cagaatctct ttttaatcta ctcctaagga tgtacaagtt agagtcagaa    1320
gacgttttgg attttttccc tctctctcat cctcccgctg tgcccttgca cttgcatatt    1380
aataacattt catggactgg gaaatagtgt tcttttttgc aagcttgatg tcaagttagt    1440
ctaaaccagc acctggcagt attttagtgc tcatcaacat tgtgacaatc acacaaggaa    1500
gatcatttct acatttctgt cctccctgcg ttctcagctt gcttaaccat tcctctacct    1560
cttgcatttt tttgcggata aatgtatccc catttctgct tctctgtttc ccctcctttt    1620
ccattgtttt tccttatggt actactttct caggtgctac atatcatata tttgtcccat    1680
ctataacata tttaaatgct ataagtagta actccattaa acaaaggcat ttacaaaagc    1740
acacaggtgt ttagaaaagc aatagtttca tcaattccaa gttatgtgga tattgtaact    1800
ggccacaaga atgaaatgga gggcatttgg tgtcataaga tggcatgtct tgatgacaag    1860
aaacaaaacg cccttcatta atatgcctca gtgtaataac tattatagaa actgttggca    1920
agcagagtgc tttcctataa cagaatgtgt cttaattttc tacttgaggg aaaggtttgt    1980
ccaggtaaca acactaaaga caaccctaag aacacccact ccagcagtat gtccattaga    2040
cactaaaact ctccaaatta tttgtcaggg agcctggcga ttctgccaag aaggcaggtg    2100
ttttgccctt agagcctata cagttctctt ggagaaattg tctttcaggc accactgtta    2160
atcactgaga ctgattctaa tgcaaagcag ggaagacaga ggcagaaacc aggagagtgg    2220
tagatcagtg cagcccagat atcggaatgg aggagcaaag tttcattcac ggatgtttgt    2280
tgaatgctgc tgcccaactc ttcctttgtc acctctaggc tattccacta agttacttat    2340
aaactggtgg ctttaactga gggctgtgta aaggtactat ttggcatgtg aagtcaggat    2400
aaatttatcg aatgtccgtt ttccacatgc aactgtgtta cagaagtagt aaaattggaa    2460
gaatcatgtt tatggtgtta cca                                            2483
```

```
        <210> 208
        <211> 366
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 208
caagcatcct gcccgccctg ctggtgacca tcctgatctt catggaccag cagatcactg     60
ccgtcattgt caaccggaag gagaacaaac tgaagaaggc tgccggctac catctggacc    120
tgttctgggt gggcatcctc atggctttgt gctcctttat ggggctcccc tggtacgtgg    180
ctgccacggt catctccatc gcccacatcg acagcctcaa gatggagaca gagaccagtg    240
cccctgggga gcagccccag tttctgggag tcaggaaca gagagtaacc ggcatcatcg     300
tcttcatcct gacgggaatc tctgtcttcc tggctcccat cctaaagtgt atccccctgc    360
cggtgc                                                               366
```

```
        <210> 209
        <211> 574
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 209
cggcgcttca cgcgtagagg caggcagtgc gaatggaatg ctcattgatg gtggtagcca     60
gatagtaaaa gttcaagggc acgctgatgg tacaacgata aataagtctg gctctcagga    120
cgtagtacaa ggaagtctgg caacgaacac aaccataaat ggtggtcgcc agtatgttga    180
acagagcaca gtagaaacaa caaccattaa aaatggcggt gagcaaagag tatatgagag    240
ccgtgcgctg gacacgacga ttgaaggcgg aactcagtct ctgaatagta agtcaacggc    300
aaaaaatacg catatctatt ctggtggcac gcaaattgtt gataacacca gcacctcgga    360
```

91

```
tgttattgaa gtttattctg gtggcgtgct tgatgttagg ggtggtacgg caacaaatgt    420
tacccagcac gatggtgcaa ttttaaaaac taacactaac ggtacgacgg tgagcggtac    480
gaatagtgaa ggtgcattct ccatccacaa tcacgtggca gacaatgtgt tgctggaaaa    540
cggtggtcat ttagacataa acgcatatgg ttcg                                574
```

<210> 210
<211> 383
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(383)
<223> n = a,t,c or g

<400> 210
```
tttttctctt ccatccagct gactgatgat cagggccccg tcctgatgac cactgtagcc     60
atgcctgtgt ttagtaagca gaacgaaacc agatcgaagg gcattcttct gggagtggtt    120
ggcacagatg tcccagtgaa agaacttctg aagaccatcc ccaaatacaa ggtaatgaat    180
gacctaatcc ctgaaatcaa agcaacagag atgcccagag ccttgttttc acaaagttca    240
ggcttcaaac tctactttgg agcgatgttt ttgctcacca ctattacagc ctgttagctt    300
gtctttatac catctgcaca gttatttaaa aggnnnnnnn nnnattattt acaaggactg    360
gctgtttttc ttatttacct cct                                           383
```

<210> 211
<211> 592
<212> DNA
<213> Homo sapiens

<400> 211
```
tttcgtgttc aggaactggc accaatgcgt gttacatgga ggacatgagc aacattgacc     60
tggtggaggg cgacgagggc aggatgtgca tcaacacaga gtggggggcc ttcggggacg    120
acggggccct ggaggacatt cgcactgagt tcgacaggga gctggacctc ggctctctca    180
acccaggaaa gcaactgttc gagaagatga tcagtggcct gtacctgggg agcttgtca    240
ggcttatctt gctgaagatg gccaaggctg gcctcctgtt tggtggtgag aaatcttctg    300
ctctccacac taagggcaag atcgaaacac ggcacgtggc tgccatggag aagtataaag    360
aaggccttgc taatacaaga gagatcctgg tggacctggg tctggaaccg tctgaggctg    420
actgcattgc cgtccagcat gtctgtacca tcgtctcctt ccgctcggcc aatctctgtg    480
cagcagctct ggcggccatc ctgacacgcc tccgggagaa caagaaggtg aacggctcc    540
ggaccacagt gggcatggac ggcaccctct acaagataca ccctcagtac cc           592
```

<210> 212
<211> 2166
<212> DNA

<213> Homo sapiens

<400> 212
```
tttcgttgca attgcaacga atggtgttgt gcctgctggt ggctcctact acatgatttc    60
caggtctctg ggcccagagt ttggggggtgc cgtgggcctc tgcttctacc tgggcactac   120
ctttgcagga gccatgtaca tcctgggcac catcgaaatc ctgctggctt acctcttccc   180
agccatggcc atcttcaagg cagaagatgc cagtggggag gcagcagcca tgctgaacaa   240
catgcgtgtt tacggcacct gtgtgctcac ctgcatggcc actgtggtgt ttgtgggtgt   300
caagtatgtc aacaagtttg cccttgtctt cctgggttgt gtcatcctct ccatcctggc   360
catctatgct ggggtcatca agtctgcctt cgacccaccc aacttcccga tctgcctcct   420
gggtaaccgc acgctgtctc gccatggctt tgatgtctgt gccaagctgg cttgggaagg    480
aaatgagacg gtgaccacac ggctatgggg cctttctgc tcctctcgct tcctcaacgc   540
cacctgtgat gaatacttca cccgaaacaa tgtcacagag atccagggca tccctggtgc   600
tgccagtggc ctcatcaaag agaacctctg gagctcctac ctgaccaagg gcgtgattgt   660
ggagaggagt gggatgacct cggtgggcct ggccgatggc actcctatcg acatggacca   720
cccttatgtc ttcagtgata tgacctccta cttcaccctg ctggttggca tctacttccc   780
ctcagtcaca gggatcatgg ctggttctaa ccgctctggg gacctgaggg atgcccagaa   840
gtcaatcccc actggcacca tcctggccat cgccaccacc tctgctgtct acatcagctc   900
cgttgttctg tttgggggcct gcattgaggg ggtcgtcctg cgggacaagt ttggcgaagc   960
tgtgaatggc aacctcgtgg tgggcactct ggcctggcca tctccatggg taattgtcat  1020
cggatccttc ttctccacct gtggggctgg gctgcagagc ctcacggggg ccccacgcct  1080
gctgcaggcc atctcgaggg atggcattgt gcccttcctg caggtctttg gccatggcaa  1140
ggccaatgga gagccgacct gggccctgct cctgactgcc tgcatctgcg agattggcat  1200
cctcattgca tccctcgacg aggtggcccc catcctctct atgttcttcc tgatgtgcta  1260
catgtttgtg aatctggcct gtgcagtgca gacgctgctg aggacaccca actggaggcc  1320
acgctttcga tattaccact ggaccctctc cttcctgggc atgagcctct gcctggccct  1380
catgttcatc tgctcctggt attatgcact ggtagccatg ctcattgctg gactcatcta  1440
caagtacatt gagtaccgtg gggcaaagaa ggagtggggc gatgggatac gaggtctgtc  1500
tctcagtgcg gctcgctatg ccctcttacg cctggaggaa gggcccccac acaccaagaa  1560
ctggaggcca cagctgctgg tgctggtgcg tgtggaccaa gaccagaatg tggtgcaccc  1620
ccagctgctc tcactgacct cccagctgaa ggcagggaag ggcctgacca tcgtgggctc  1680
tgtccttgag ggcacctttc tggaaaatca tccacaggcc cagcgggcag aagagtctat  1740
caggcgcctg atggaggcag agaaggtgaa gggcttctgc caggtggtga tctcctccaa  1800
cttgcgtgat ggcgtgtccc atctgatcca gtctggggc ctcgggggc tgcagcacaa  1860
cactgtgctt gttggctggc cccgcaactg cgccagaag gaagatcatc agacgtggag  1920
gaacttcatt gagctggtcc gggaaaccac agctggccac ttagccctgc tggtcaccaa  1980
gaacgtttcc atgtttcctg ggaaccctga gcgcttctct gaaggcagca tcgaccgttg  2040
ggggattggg cacgatggag gcatgctcat gctggtgccc ttcctgctgc ggcaccacaa  2100
ggtctggcgg aagtgcaaga tgcgtatctt cactgtggcc cagatggttg acatgcatgc  2160
catgag                                                               2166
```

<210> 213
<211> 392
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(392)
<223> n = a,t,c or g

<400> 213

```
ttctatctga ggctactgtc tttttttctgc tttcaggagc atgagaagag gtgttggagc      60
gttgactttta atttgatgga tcctaaactc ttggcttcag gttctgatga tgcaaaaggt     120
actgtttgaa tctctttctc agcacctcct tctccctggc cctcttaact gtaattcctt      180
tcatcggcag aaatacaaat atttactcaa actcatgtca gtcctttgtg attactgatt      240
attattattc cccannnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn       300
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn       360
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nn                                     392
```


    <210> 214
    <211> 425
    <212> DNA
    <213> Homo sapiens

    <400> 214
```
ggcggaattc aaaagcaatg cacaggtctt cctgtgacgg gccgctactc tctctgccct      60
cagtgggacg gtcagccacc catgccctgg tccaggccca gctgatctgc tcaggagcca     120
ggcggggcat gcacgctttt attgtgccaa tccggagtct tcaggaccac accccactgc      180
caggtaagcc cataatgctc cctcaaggaa ccctgccagg aggagagccc aggtggcctc      240
cctgacctgg ggccccagag ggccacagga gtagctaaga catgtctccc ttgggcaggg      300
agcggtccag ttggacagac ttggtgctaa ctggctaggt gaacttgagc aagatttagc      360
atctttctga cctcagcttg ttcacctgca aaataggtac aataatccca gtgtcacagg      420
ctgct                                                                  425
```


    <210> 215
    <211> 608
    <212> DNA
    <213> Homo sapiens

    <400> 215
```
ctgcgggacc ctcatcttgc aggcccgggc ctatgtggga ccgcacgtcc tggcagtggt      60
gacccgcaca gggttctgca cggcaaaagg gggcctggtg agctccatct tgcaccccg      120
gcccatcaac ttcaagttct ataaacacag catgaagttt gtggctgccc tctctgtcct      180
ggctctcctc ggcaccatct acagcatctt catcctctac cgaaaccggg tgcctctgaa      240
tgagattgta atccgggctc tcgacctggt gaccgtggtg gtgccacctg ccctgcctgc      300
tgccatgact gtgtgcacgc tctacgccca gagccgactg cggagacagg gcattttctg      360
catccaccca ctgcgcatca acctggggggg caagctgcag ctggtgtgtt tcgacaagac      420
gggcaccctc actgaggacg gcttagacgt gatggggggtg gtgcccctga aggggcaggc      480
attcctgccc ctggtcccag agcctcgccg cctgcctgtg gggcccctgc tccgagcact      540
ggccacctgc catgccctca gccggctcca ggacaccccc gtgggcgacc ccatggactt      600
gaagatgt                                                               608
```


    <210> 216
    <211> 858
    <212> DNA

94

<213> Homo sapiens

<400> 216

```
ctatctggtc actggccact gtggctttgt attcctctaa cgtggctgcc aaggctgctt      60
ttcctttctg ctcagactca ataattcgct ccatatggtg actgcgttct ttgagtgccc     120
ctatcatttc ttgagcttcc ttattgtctt gttctgccat tttcaaagta ttgcttaaat     180
gctgctggac accaagaagc tgctcccgtt caaaacgggc attctcagcg aggtccatgt     240
aacgttgctc taattccata tagcgccac tttttacatc ttcatctatg acagattgaa      300
tacttccgct ctcttctaga tgagcatcac atttcttatg tcatagatga agatgtaaaa     360
agtgggcgct atatggaatt agagcaacgt tacatggacc tcgctgagaa tgcccgtttt     420
gaacgggagc agcttcttgg tgtccagcag catttaagca atactttgaa aatggcagaa     480
caagacaata aggaagctca agaaatgata ggggcactca aagaacgcag tcaccatatg     540
gagcgaatta ttgagtctga gcagaaagga aaagcagcct ggcagccac gttagaggaa      600
tacaaagcca cagtggccag tgaccagata gagatgaatc gcctgaaggc tcagctggag     660
aatgaaaagc agaaagtggc agagctgtat tctatccata actctggaga caaatctgat     720
attcaggacc tcctggagag tgtcaggctg gacaaagaaa agcagagac tttggctagt      780
agcttgcagg aagatctggc tcatacccga aatgatgcca atcgattaca ggatgccatt     840
gctaaaggta gaggatga                                                   858
```

<210> 217
<211> 399
<212> DNA
<213> Homo sapiens

<400> 217

```
agcacgctac cgctttaccc tcagcgccag gacgcaggtg ggctctgggg aagccgtcac      60
agaggagtca ccagcacccc cgaatgaagc tactccaacc gcagctcctc ccacattgcc     120
cccgactacc gtgggtgcga cgggcgctgt gagcagtacc gatgctactg ccattgctgc     180
caccaccgaa gccacaacag tccccatcat cccaactgtc gcacctacca ccatggccac     240
caccaccacc gtcgccacaa ctactacaac cactgctgcc gccaccacca ccacggagag     300
tcctcccacc accacctccg ggactaagat acacgaatcc gcccctgatg agcagtccat     360
atggaacgtc acggtgctcc ccaacagtaa atgggccaa                            399
```

<210> 218
<211> 662
<212> DNA
<213> Homo sapiens

<400> 218

```
ctgaagtcaa cgcaagacga aatcaaccag caaggagca aactgtccca gctgcatgaa       60
agccgccagg aggcccacag gagcctggag cagtatgacc aggtgctcga tggagcccat     120
ggtgccagcc tgaccgacct ggccaacctg agcgaaggcg tctccctggc agagagggggc    180
agttttggag ccatggatga tccttttcaaa aataaagcct tgttatttag caacaacacg    240
caagagttgc atccggatcc tttccagaca gaagacccct tcaaatctga cccatttaaa     300
```

```
ggagctgacc ccttcaaagg cgacccgttc cagaatgacc cctttgcaga acagcagaca    360
acttcaacag atccatttgg aggggaccct ttcaaagaaa gtgacccatt ccgtggctct    420
gccactgacg acttcttcaa gaaacagaca aagaatgacc catttacctc ggatccattc    480
acgaaaaacc cttccttacc ttcgaagctc gacccctttg aatccagtga tcccttttca    540
tcctccagtg tctcctcaaa aggatcagat ccctttggaa ccttagatcc cttcggaagt    600
gggtccttca atagtgctga aggctttgcc gacttcagca ctattgaagg tcgacgcggc    660
cg                                                                   662
```

```
<210>  219
<211>  752
<212>  DNA
<213>  Homo sapiens
```

```
<400>  219
cggacgcgtg ggggatctgg caatagctcc caaccctcac ttcgtgaggg ccacgacaaa     60
cctgttttta atggagctgg aaagcctcat tccagcacct cttcaccaag tgtcccaaag    120
acttctgcta gcaggactca gaaatctgct gttgagcaca aagccaaaaa atctctgtcc    180
catcctagcc attccaggcc tgggcccatg gtcaccccac acaataaggc taagagtcca    240
ggtgtcaggc agccaggcag cagctctagc tcagcccctg ggcagcccag cacaggggtt    300
gctcgaccca cagttagttc tggccctgtg cctaggcgcc agaatggcag ctccagctca    360
ggacctgagc gatcaatcag tgggtccaag aagccaacca atgactcaaa tccctctagg    420
cggacagtca gtggtacatg tggccctgga caacctgcaa gcagctcagg tggccctggg    480
cgacccatca gtggttcagt tagttctgca agacccttgg gcagctctcg tggccctggc    540
cggcctgtga gcagtccaca tgaacttcga cgaccagtga gtggcttggg ccccccgggg    600
cggtctgtca gtggccctgg gagatccata agtggctcaa ttccagctgg acggactgtc    660
agtaattcag tcccaggaag accagtgagc agcttgggac ctgggcaaac agttagtagc    720
tcaggtccca ctataaagcc taagtgcact gt                                  752
```

```
<210>  220
<211>  582.
<212>  DNA
<213>  Homo sapiens
```

```
<400>  220
ttattattat tttgcataga gacaagcact cactgtgtta cccaggctgg ttttgaactc     60
ctgagcttaa tcagttctca cctgctttgc cctcccaaag tgctatgatt acaggtgtga    120
gccaccacgc ttggccctgc ccaggagtca ttttttgtatc tacaggtatc ttcctatgct    180
gtagacagat gcccttttttc aaggcaaaaa ccctagccat ttttctcttc ccttcagag    240
tctgcaacat cctctcaact catccaagtg actactgcct ggtgctcttg gggatgcagg    300
gaggcctgag aaggccaatg tctatacaga aagttctaac atagtgcact gagtcaatgt    360
gggcacttta aagccctttc acctgccaag tcacgaagca cccctatagt tgtgtttgta    420
aaatactggg gggtttgaag gggaaaaggg ataactccaa ggtaccatct ttgcatttca    480
gatccacaca acttaaagat ctgctgtcga gtgaatgggg aagtggtcca gagcagcaac    540
accaaccaga tggtattcaa gacagaggac ctgatagcct gg                       582
```

```
        <210> 221
        <211> 440
        <212> DNA
        <213> Homo sapiens




        <400> 221
ggaattcgat cagtagaagt ttgggggata tagaaacgaa ggttttctaa cttttagctt      60
tcaaggagat tgtccggttg ggaaagcaag atatgaaaaa taaatatgtc aagaatataa     120
tccaaaacaa tctaattaag tgctagaagt ttgccatgga cagacaaagt gctacttggg     180
aaggaagttc cagaaacacc acagctgggt acattcttca ccactctgag tggtggcagt     240
gacgcgttgg ctttgtgaga atggtgtgtc ttacttgaga aagtgtgtgt gttctgcctg     300
caggcatggg actcgctgtg ctggagaagt ggcagccgct gcaaacaatt cgcactgcac     360
agtcggaatt gctttcaacg ccaagatcgg aggtatggga aaccaactca cgtggatgta     420
gaaatgcgcc agttagctct                                                 440




        <210> 222
        <211> 489
        <212> DNA
        <213> Homo sapiens




        <400> 222
ccgacgattt cgtgaggcgg cagccaggtg gggttccagc cagagcacgc acgcacggag      60
ccgggagcat gcagcctgca ctgcggggga tgtgatgctc ggctctaact cgcctggctg     120
gcccgccacg gacgcctcag cttgcaacca tggtaacgtt tctggcgggg gacaccccg      180
ggagcccacc gcgatgggca gcctcctggt gactgatgga cgagtgtcca cctcccagac     240
cgagagcgct tagtaggtcg gaggaagtgg agaggatgta acacgccccc agccgggagt     300
gaagccctga ggagctcctc cccccttcgt tcccaccctc aagtctgacg atgacacctc     360
caattttgat gaaccaaaga agaattcgtg ggtttcatcc tctccgtgcc agctgagccc     420
ctcaggcttc tcgggtgaag aactgccgtt tgtggggttt tcgtacagca aggcactggg     480
gattcttgg                                                             489




        <210> 223
        <211> 493
        <212> DNA
        <213> Homo sapiens




        <400> 223
tttcgtcgag cgccttgcgc acctccacgc tgcctgcgcc ccgcgccgca aggtggcgct      60
cctcttggag gtgtgcagag atgtctatgc gggcctggct cgaggcgaga accaagatcc     120
cctgggggcc gacgccttcc tgccggcgct gaccgaggaa ctcatctgga gcccggacat     180
tggggacacg cagctggacg tagagtttct tatggagctc ttagatccag atgagctgcg     240
gggagaggct gggtactacc tgaccacgtg gtttggggcg ctgcaccaca ttgcccacta     300
ccagcccgaa acagaccgcg ctccccgggg gctcagctcc gaggcccgcg cctccctgca     360
```

```
ccagtggcac cgcaggcgga cgctgcacag aaaggatcat cccagagccc aacagctgga    420
ctgaccctgg ctggtcgaag agccctggcc agatgtcctg tggacagacc caatttctgg    480
cctcgtctgc tgg                                                       493
```

```
        <210> 224
        <211> 883
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 224
agtgacctgg aaacaagttc tgatccagaa ggtgaggatt gggatgagga agctgaggat     60
gatggttttg atagtgatag ctcactgtca gactcagacc ttgaacaaga ccctgaaggg    120
cttcaccttt ggaactcttt ctgcagtgta gatccttata atccccagaa ctttacagca    180
acaattcaga ctgctgccag aattgttcct gaagagcctt ctgattcaga gaaggatttg    240
tctggcaagt ctgatctaga gaattcctcc cagtctggaa gccttcctga gacccctgag    300
catagttctg gggaggaaga tgactgggaa tctagtgcag atgaagcaga gagtcttcaa    360
actgtgggaa cttcattctg ttaattctgg atggacccct acaacccttt aaattttaag    420
gctccttttc aaacatcagg ggaaaatgag aaaggctgtc gtgactcaaa gaccccatct    480
gagtccattg tggccatttc tgagtgtcac accttacttt cttgtaaggt gcagctgttg    540
gggagccaag aaagtgaatg tccagactcg gtacagcgtg acgttctttc tggaggaaga    600
cacacacatg tcaaaagaaa aaaggtaacc ttccttgaag aagttactga gtattatata    660
agtggtgatg aggatcgcaa aggaccatgg gaagaatttg caaggatgg atgcaggttc     720
cagaaacgaa ttcaagaaac agaagatgct attggatatt gcttgacatt tgaacacaga    780
gaaagaatgt ttaatagact ccaggggaaca tgcttcaaag gacttaatgt tctcaagcaa    840
tgttgagttg gcagcctgta gtcctagcta gcatacacta cct                      883
```

```
        <210> 225
        <211> 389
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 225
cggccgcgtc tacggcatat tcttttttg gaactgtgga gaatatggct ccaaaagtgg      60
ttaatcgtcc aggtcatact cagagtgctg actgggggtc ttttgggggg ttaatgggaa    120
ggtttgaatt tgggattttt ttaaagggga aggagattgt taagtgagga tcaacaggga    180
atggtaaaga aactgggggt tttattttct ttattttatg ccctatgtaa taaataacca    240
aaaaacatta ttgcgtgcag tataaaagga ctatgaaatc tgttagctgc gtctatctca    300
tcctaatttg aaagggcaaa aaaaaatatt accatagatt tcctgctaat agtaacaatc    360
taaagcatta atggtgttgg gtcttttgg                                      389
```

```
        <210> 226
        <211> 412
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 226
gggtttgttt ttcttccagg ccccatgtct gtgggtttgg acttctctct gccaggcatg      60
gagcatgtct atgggatccc tgagcatgca gacaacctga ggctgaaggt cactgagtga     120
gtcctatggt gacatcagga agatggaggt gggcaggaag gagtcaggcc tttagggaga     180
tgggtgtgca tattggatac tctaggcaag catgggtcat ttcttgtgtc cagaatcacc     240
tttggtgata gaaaattttt tgagaaagga caagaggagc ctttgcttat ctctcacctg     300
tgtctgtgga gtggtgttag catataacgc agcctggggc cagttagcag cccaagtctg     360
tctgtttgcc tgcaggggtg gggagccata tcgcctctac aatttggatg tg             412
```


```
        <210> 227
        <211> 390
        <212> DNA
        <213> Homo sapiens
```


```
        <400> 227
gggagtgagt gccagggcac tgacctggac acccgcaact gtaccagtga cctctgtgta      60
cacactgctt ctggccctga ggacgtggcc ctctatgtgg gcctcatcgc cgtggccgtc     120
tgcctggtcc tgctgctgct tgtcctcatc ctcgtttatt gccggaagaa ggaggggctg     180
gactcagatg tggctgactc gtccattctc acctcaggct tccagcccgt cagcatcaag     240
cccagcaaag cagacaaccc ccatctgctc accatccagc cggacctcag caccaccacc     300
accacctacc agggcagtct ctgtccccgg caggatgggc ccagccccaa gttccagctc     360
accaatgggc acctgctcag ccccctgggt                                      390
```


```
        <210> 228
        <211> 777
        <212> DNA
        <213> Homo sapiens
```


```
        <400> 228
cttatttata atgaagatat gatttgttgg attgaatcaa gagaatcttc aaatcaactc      60
aaatgtatcc agataacaaa agcaggagga ttaacagatg aatggacaat caatattctt     120
caatccttcc acaatgtgca acaaatggcg attgactggc tcactcgaaa tctctatttt     180
gtggaccatg tcggtgaccg gatctttgtt tgtaattcca acggttctgt atgtgtcacc     240
ctgattgatc tggagcttca caatcctaaa gcaatagcag tagatccaat agcaggaaaa     300
cttttctttta ctgactacgg gaatgtcgcc aaagtggaga gatgtgacat ggatgggatg     360
aaccgaacaa ggataattga ttcaaagaca gagcagccag ctgcactggc actagaccta     420
gtcaacaaat tggtttactg ggtagatctt tacttggact atgtgggagt agtggactat     480
caaggaaaaa atagacacgc tgtcattcaa ggcagacaag tcagacatct ttatggtata     540
actgtgtttg aagattattt gtatgcaacc aattctgata gctacaatat cgtaaggata     600
agccgattta atgggactga tattcactca ttaattaaaa ttgagaatgc ttggggaatc     660
cgaatttatc aaaaaagaac tcaaccaaca gtcagaagcc atgcatgtga agtcgatcca     720
tatggaatgc cagggggctg ttcacacatc tgtctactca gcagcagtta cacgaaa        777
```

```
          <210> 229
          <211> 486
          <212> DNA
          <213> Homo sapiens




          <400> 229
tttcgtctgg gaacccgcag cctggggact cctccggcgg gggcgctggg ggcgggctgc        60
cgtcccctgg ggagcaggag ctgagccggc gcttgcagcg cctgtatccc gcggtcaacc       120
agcaagagac tccgctgccg cgctcctgga gccccaagga caaatacaac tacattggtc       180
tctcccaggg caacctccgc gtccactaca aaggtcatgg caaaaatcac aaagatgcgg       240
cctcagtgcg tgccacccac cccatacctg ctgcctgtgg catttattac tttgaagtga       300
agattgtcag caaaggaaga gatggttaca tgggaatagg actctcggct caaggcgtca       360
acatgaacag acttcctggt tgggacaaac attcctatgg ttaccatggt gatgatgggc       420
attcgttctg ctcctcgggg actggccagc cctatggtcc cacattcacc acaggagacg       480
tgatcg                                                                  486




          <210> 230
          <211> 396
          <212> DNA
          <213> Homo sapiens




          <400> 230
tttttttttt ttaagatggg gtctcgctct gtcacccagg ctggagtgca gtggtgtgat        60
gtcagctcac tgcaagctcc gcctcccagg ttcacactat tctgcctcag cctcccaagt       120
agctgggact acaggtgcgt gccaccatgc ccggctaatt ttttgtatt tttagtagag       180
acggggtttc accgtgttag ccagtatggt cttgatctcc tgacctcgtg atccacctgc       240
ctcggcctcc caaaagtgct gggattacag gtgtgagctg ctgcgcctgg cttatgagtc       300
gtatgttctg atcctccctc ttgaagttgc cttctgtggt ctaaggaggg cctgaaggtt       360
caggtaaaaa cttcagggtg accttcactg ggggtg                                 396




          <210> 231
          <211> 713
          <212> DNA
          <213> Homo sapiens




          <400> 231
tcagctcagc ttggcacgag gaaaggtgtt cttgtgtgcc ttgtcttttg tttactttgc        60
caaagcattg gcagaaggct atctgaagag caccatcact cagatagaga gaagggttga       120
tatcccttct tcactggtgg gagttattga tggtagtttt gaaattggga atctcttagt       180
tataacattt gttagctact ttggagccaa acttcacagg ccaaaaataa ttggagcagg       240
```

```
gtgtgtaatc atgggagttg gaacactgct cattgcaatg cctcagttct tcatggagca       300
gtacaaatat gagagatatt ctccttcctc caattccact ctcagcatct ctccgtgtct       360
cctagagtca agcagtcaat taccagtttc agttatggaa aaatcaaaat ccaaaataag       420
taacgaatgt gaagtggaca ctagctcttc catgtggatt tatgttttcc tgggcaatct       480
tcttcgtgga ataggagaaa ctcccattca gcctttgggc attgcctacc tggatgattt       540
tgccagtgaa gacaatgcag ctttctatat tgggtgtgtg cagacggttg caattatagg       600
accaatcttt ggtttcctgt taggctcatt atgtgccaaa ctatatgttg acattggctt       660
tgtaaaccta gtcatttta ggtggaagca tgttacagca cattatcgag gaa             713
```

```
        <210> 232
        <211> 1067
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 232
cagccttcca aggtagggca caccaaggcc taaggaatca gaaagggccc gagggtgggc        60
tgtgtcctgg ctttcaggcc ctggggcgac caccagcctc tgctcactct gaggctccag       120
ccagg-gcgcc aagcctcagg accgtgggtg gggcccaagg acactctgga ccccgttcc        180
attcatgaga ggccctcagc acgccacgtg tctgctgtga cagcccgcag ggagggtgga       240
agccttctgt aaattccaca tgtgggccga gggcatgacg tccttgatga aggccgcgct       300
ggacctcacc taccccatca cgtccatgtt ctccggagcc ggcttcaaca gcagcatctt       360
cagcgtcttc aaggaccagc agatcgagga cctgtggatt ccttatttcg ccatcaccac       420
cgacatcaca gcctcggcca tgcgggtcca caccgacggc tccctgtggc ggtacgtgcg       480
tgccagcatg tccctgtccg gttacatgcc ccctctctgt gacccgaagg acggacacct       540
gctgatggac gggggctaca tcaacaacct cccagcggat gtggcccggt ccatgggggc       600
aaaagtggtg atcgccattg acgtgggcag ccgagatgag acggacctca ccaactatgg       660
ggatgcgctg tctgggtggt ggctgctgtg gaaacgctgg aacccttgg ccacgaaagt       720
caaggtgttg aacatggcag agattcagac gcgcctggcc tacgtgtgtt gcgtgcggca       780
gctggaggtg gtgaagagca gtgactactg cgagtacctg cgcccccca tcgacagcta       840
cagcaccctg gacttcggca gttcaacga gatctgcgaa gtgggctacc agcacgggcg       900
cacggtgttt gacatctggg ccgcagcgg cgtgctggag aagatgctcc gcgaccagca       960
ggggccgagc aagaagcccg cgagtgcggt cctcacctgt cccaacgcct ccttcacgga      1020
ccttgccgaa attgtgtctc gcattgagcc cgccaagccc gccatgg                   1067
```

```
        <210> 233
        <211> 704
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 233
tttcgtgtga gggagagccg agggaaccag cgcggtgcct agcggaactc cagggctgga        60
atcccgagac acaagtgcat ctgctagctg ttagcacttg cagacggag ttctcctcta       120
gggtagttct aactttgggt aataatgttt gtcagctacc tgatattaac attgctccac       180
gttcaaacag cagtgttagc aagacctggg ggagagagca ttggctgtga tgactactta       240
ggctccgaca aagtcgtgga caaatgtggg gtgtgtggag gagacaacac gggctgtcag       300
gttgtgtcgg gcgtgtttaa gcatgccctc accagcctgg ctaccaccg cgtcgtggag       360
attcccgagg gagccacgaa aatcaacatc acggagatgt acaagagcaa caactatttg       420
gccctgagaa gtcgttctgg acgctccatc atcaatggga actgggcaat tgatcgacca       480
```

```
ggaaaatacg agggcggagg gaccatgttc acctacaagc gtccaaatga gatttcgagc    540
actgccggag agtccttttt ggcggaaggt cccaccaacg agatcttgga tgtctacgtg    600
agtttggatg tttctggact gttctttgga ttttgaatct tgtcacttct aaggaacata    660
ctctgaacaa ataagcaaca aatcattgcc catactcaat aaaa                     704
```

```
<210> 234
<211> 420
<212> DNA
<213> Homo sapiens
```

```
<400> 234
atttcaggag ggaccagaag cgcaggcccg ctcaggagga attacaactt catcgccgcg    60
gtggtggaga aggtggcgcc atcggtggtt cacgtgcagc tgtggggcag gaaccagcag    120
tggattgagg tggtgctcca gaatgggggcc cgttatgaag ctgttgtcaa ggatattgac    180
cttaaattgg atcttgcggt gattaagatt gaatcaaatg ctgaacttcc tgtactgatg    240
ctgggaagat catctgacct tcgggctgga gagtttgtgg tggctttggg cagcccattt    300
tctctgcaga acacagctac tgcaggaatt gtcagcacca aacagcgagg gggcaaagaa    360
ctggggatga aggattcaga tatggactac gtccagattg atgccacaat taactatggg    420
```

```
<210> 235
<211> 1057
<212> DNA
<213> Homo sapiens
```

```
<400> 235
cccacgcgtc cgagaactca aagaaattct ggataggaaa gggcatttct cagagaatga    60
gacaaggtgg atcattcaaa gtctcgcatc agctatagca tatcttcaca ataatgatat    120
tgtacataga gatctgaaac tggaaaatat aatggttaaa agcagtctta ttgatgataa    180
caatgaaata aacttaaaca taaaggtgac tgattttggc ttagcggtga agaagcaaag    240
taggagtgaa gccatgctgc aggccacatg tgggactcct atctatatgg cccctgaagt    300
tatcagtgcc cacgactata gccagcagtg tgacatttgg agcataggcg tcgtaatgta    360
catgttatta cgtggagaac cacccttttt ggcaagctca gaagagaagc ttttgagtt    420
aataagaaaa ggagaactac attttgaaaa tgcagtctgg aattccataa gtgactgtgc    480
taaaagtgtt ttgaaacaac ttatgaaagt agatcctgct cacagaatca cagctaagga    540
actactagat aaccagtggt taacaggcaa taaactttct tcggtgagac caaccaatgt    600
attagagatg atgaaggaat ggaaaaataa cccagaaagt gttgaggaaa acacaacaga    660
agagaagaat aagccgtcca ctgaagaaaa gttgaaaagt taccaaccct ggggaaatgt    720
ccctgagacc aattacactt cagatgaaga ggaggaaaaa caggtaggaa gaatcattgc    780
tgcatttctc ccaagtgtaa aatacccctca ccacacctgg aacatttttt tgcaaatctg    840
tcttttttgtt gttagtttgt aacaaaggcc gagcgttata tagcaagtaa agttctttct    900
gccttataag gctagcatga tttagcgagg tggcctacat gtttatttta aggttggtga    960
ttatgtaggg caggtgtctg caaacttttt ctgtaaggga acaaacagta aatattttag    1020
gctttgtggg ccctagtagt ctttgtcaca actactc                            1057
```

```
<210> 236
<211> 467
<212> DNA
<213> Homo sapiens
```

```
<400> 236
ttgagtatta gtgtcagtga tgtgtctctc tctgatgaag gacagtacac ctgttcttta      60
tttacaatgc ctgtcaaaac ttccaaggca tatctcaccg ttctgggtgt tcctgaaaag     120
cctcagatta gtggattctc atcaccagtt atggagggtg acttgatgca gctgacttgc     180
aaaacatctg gtagtaaacc tgcagctgat ataagatggt tcaaaaatga caaagagatt     240
aaagatgtaa aatatttaaa agaagaggat gcaaatcgca agacattcac tgtcagcagc     300
acactggact tccgagtgga ccggagtgat gatggagtgg cggtcatctg cagagtagat     360
cacgaatccc tcaatgccac ccctcaggta gccatgcagg tgctagaaat gcactataca     420
ccatcagtta agattatacc atcgactcct tttccacaag aaggacg                   467
```

```
<210> 237
<211> 416
<212> DNA
<213> Homo sapiens
```

```
<220>
<221> misc_feature
<222> (1)...(416)
<223> n = a,t,c or g
```

```
<400> 237
ggtacaacca gaaagtggat ctcttcagcc tgggaattat cttctttgag atgtcctatc      60
accccatggt cacggcttca gaaaggatct ttgttctcaa ccaactcaga gatcccactt     120
cgcctaagtt tccagaagac tttgacgatg gagagcatgc aaagcagaaa tcagtcatct     180
cctggctgtt gaaccacgat ccagcaaaac ggcccacagc cacagaactg ctcaagagtg     240
agctgctgcc cccaccccag atggaggagt cagagctgca tgaagtgctg caccacacgc     300
tgaccaacgt ggatggaaag gcctaccgca ccattgatgg gcccagatct tttcggcagc     360
gcatctcccc tgccatcgnt ttacacctat gaccagcgac atattgaagg gcaact         416
```

```
<210> 238
<211> 739
<212> DNA
<213> Homo sapiens
```

```
<400> 238
ggaccaggac tacaagtacg acagtacctc agacgacagc aacttcctca acccccccag      60
ggggtgggac catacagccc caggccaccg gactttgaa accaaagatc agccagaata     120
tgattccaca gatggcgagg gtgactggag tctctggtct gtctgcagcg tcacctgcgg     180
gaacggcaac cagaaacgga cccggtcttg tggctacgcg tgcactgcaa cagaatcgag     240
```

```
gacctgtgac cgtccaaact gcccaggaat tgaagacact tttaggacag ctgccaccga    300
agtgagtctg cttgcgggaa gcgaggagtt taatgccacc aaactgtttg aagttgacac    360
agacagctgt gagcgctgga tgagctgcaa aagcgagttc ttaaagaagt acatgcacaa    420
ggtgatgaat gacctgccca gctgcccctg ctcctacccc actgaggtgg cctacagcac    480
ggccgacatc ttcgaccgca tcaagcgcaa ggacttccgc tggaaggacg ccagcggggcc   540
caaggagaag ctggagatct acaagcccac tgcccggtac tgcatccgct ccatgctgtc    600
cctggagagc accacgctgg cggcacagca ctgctgctac ggcgacaaca tgcagctcat    660
caccaggggc aaggggggcgg gcacgcccaa cctcatcagc accgagttct ccgcggagct    720
ccactacaag gtggacgtc                                                  739
```

```
        <210> 239
        <211> 611
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 239
ggaatcggaa gaaaatggag agagtgcaat ggacagcaca gtggccaaag aaggcactaa    60
tgtaccatta gttgctgctg gtccttgtga tgatgaaggc attgtgacta gcacaggcgc   120
aaaagaggaa gacgaggaag gggaggatgt tgtgactagt actggaagag gaaatgaaat    180
tgggcatgct tcaacttgta caggggttagg agaagaaagt gaagggggtct tgatttgtga   240
aagtgcagaa ggggacagtc agattggtac tgtggtagag catgtggaag ctgaggctgg    300
agctgccatc atgaatgcaa atgaaaataa tgttgacagc atgagtggca cagagaaagg    360
aagtaaagac acagatatct gctccagtgc aaaagggatt gtagaaagca gtgtgaccag    420
tgcagtctca ggaaaggatg aagtgacacc agttccagga ggttgtgagg gtcctatgac    480
tagtgctgca tctgatcaaa gtgacagtca gctcgaaaaa gttgaagata ccactatttc    540
cactggcctg gtcggggggta gttacgatgt tcttgtatct ggtgaagtcc cagaatgtga    600
agttgctcac a                                                          611
```

```
        <210> 240
        <211> 1090
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 240
tttttttttt ttaagcttga aataaaattt ttattttgtt ttgaattaaa tcaaccatga    60
ttattcacag tgcagtaagt gtgtatcatc tgtttgatat tttcatatta cagttttgat   120
agtgctcttc agtctgcgaa atcttctttg ggtggaaatg atgaactgtc agctactttc    180
ttagaaatga aaggacattt ctatatgtat gctggttctc tgctcttgaa gatgggtcag    240
catggtaata atgttcaatg gcgagctctt tctgagctgg ctgcgttgtg ctatctcata    300
gcatttcagg taagtcttcc acttggagca attgacattt cacggagtct tgatgtgttt    360
taaatgaagg tgtgctctgg tatgtaatga caatatgtga acaaacctgt ggaattaaag    420
ttaaaatgaa atagtcaatt tgatacagtg gaaaataact aagcatacac aatactggtg    480
aggctggtga acagggatg ttgaatgcac tcttgtcgaa agcctgcatt gccatgattt     540
gtttgtagac aaatttgaag agtttgatct ttttactctg ccattttttgg gaacatgata   600
aagatgtaat ctcgtattat gggtaaagct tgattcaaaa agatgtgtta cttggacaaa    660
atcctaataa gtagacgtag ggcaatggct ttatagccta tgatagaaga atatgattgc    720
aatttaacat gttaattgaa acacatgtat ataacattta tgactgtatt gtgtatatgt    780
aacagtatat ctattaatct ttgaaaacat aaaacctttt cttattttttt atttttttat    840
```

```
tttttttttga gaccaagtct ctctctgtcg ccaggctgga gtgcagtggt gtgatctcgg      900
ctcactgcag cctccacctc ctgggttcga gtgattctcc tgcctcagcc tcccgagtag      960
ctgggactac aggcccatgc taccaagccc agctaatttt ttgtattttt aatagagatg     1020
gggtttcacc atgttggcca ggatggtcgc aatctcttga cctcttgatc tacctgcctt     1080
ggtctcccaa                                                            1090
```

```
          <210> 241
          <211> 680
          <212> DNA
          <213> Homo sapiens
```

```
          <400> 241
gcaacaccca tcccaggaaa agccacaagt cctgacccccc agccccagga agcagaagct       60
gaacagaaag tacaggtccc accatgacca gatgatctgc aagtgcctct ccctgagcat      120
atcctactcc gctaccattg gcggcctgac caccatcatc ggcacctcca ccagcctcat      180
cttcctggaa cacttcaaca accagtatcc agcctcagag gtggtgaact ttggcacctg      240
gttcctcttc agcttcccca tatccctcat catgctggtg gtcagctggt tctggatgca      300
ctggctgttc ctgggctgca attttaaaga gacctgctct ctgagcaaga agaagaagac      360
caaaagggaa cagttgtcag agaagaggat ccaagaagaa tatgaaaaac tgggagacat      420
tagctaccca gaaatggtga ctggattttt cttcatcctg atgaccgtac tgtggtttac      480
ccgggagcct ggctttgtcc ctggctggga ttctttcttt gaaaagaaag gctaccgtac      540
tgatgccaca gtctctgtct tccttggctt cctcctcttc ctcattccag cgaagaagcc      600
ctgctttggg aaaaagaatg atggagagaa ccaggagcac tcactgggga ccgagcccat      660
catcacgtgg aaggacttcc                                                 680
```

```
          <210> 242
          <211> 491
          <212> DNA
          <213> Homo sapiens
```

```
          <400> 242
cttgaaagag aaggggacaa aggaacacca gtattaagag gattttccag tgtttctggc       60
agttggtcca gaaggatgcc tccattcctg cttctcacct gcctcttcat cacaggcacc      120
tccgtgtcac ccgtggccct agatccttgt tctgcttaca tcagcctgaa tgagccctgg      180
aggaacactg accaccagtt ggatgagtct caaggtcctc ctctatgtga caaccatgtg      240
aatggggagt ggtaccactt cacgggcatg gcgggagatg ccatgcctac cttctgcata      300
ccagaaaacc actgtggaac ccacgcacct gtctggctca atggcagcca cccccctagaa      360
ggcgacggca ttgtgcaacg ccaggcttgt gccagcttca tgggaactg ctgtctctgg      420
aacaccacgg tggaagtcaa ggcttgccct ggaggctact atgtgtatcg tctgaccaag      480
cccagcgttt g                                                          491
```

```
          <210> 243
          <211> 983
          <212> DNA
```

<213> Homo sapiens

```
        <400> 243
tgcggccgca ccatgagcga catccgccac tcgctgctgc gccgcgatgc gctgagcgcc      60
gccaaggagg tgttgtacca cctggacatc tacttcagca gccagctgca gagcgcgccg     120
ctgcccatcg tggacaaggg ccccgtggag ctgctggagg agttcgtgtt ccaggtgccc     180
aaggagcgca gcgcgcagcc caagagactg aattcccttc aggagcttca acttcttgaa     240
atcatgtgca attatttcca ggagcaaacc aaggactctg ttcggcagat tatttttta    300
tcccttttca gccctcaagg gaacaaagcc gatgacagcc ggatgagctt gttgggaaaa     360
ctggtctcca tggcggtggc tgtgtgtcga atcccggtgt tggagtgtgc tgcctcctgg     420
cttcagcgga cgcccgtggt ttactgtgtg aggttagcca aggcccttgt agatgactac     480
tgctgtttgg tgccgggatc cattcagacg ctgaagcaga tattcagtgc cagcccgaga     540
ttctgctgcc agttcatcac ctccgttacc gcgctctatg acctgtcatc agatgacctc     600
attccaccta tggacttgct tgaaatgatt gtcacctgga tttttgagga cccaaggttg     660
attctcatca ctttttttaaa tactccgatt gcggccaatc tgccaatagg attcttagag     720
ctcaccccgc tcgttggatt gatccgctgg tgcgtgaagg caccccctggc ttataaaagg     780
aaaaagaagc ccccccttatc caatggccat gtcagcaaca aggtcacaaa ggacccgggc     840
gtggggatgg acagagactc ccacctcttg tactcaaaac tccacctcag cgtcctgcaa     900
gtgctcatga cgctgcagct gcacctgacc gagaagaatc tgtatgggcc gcctggggct     960
gatcctcttc gaccacatgg tcc                                             983
```

<210> 244
<211> 526
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(526)
<223> n = a,t,c or g

```
        <400> 244
cggctcgtcc nnatttgaac cccttctttg atcggcctgc agtaccgggc cggaattacc      60
cggtcgagcc acgcgttcgc tcacgcgtcc ggccaaccag aagggttgcg acggggaccg     120
cctgtactac gacggctgtg ccatgatcgc catgaacgga agcgtctttg ctcaaggatc     180
ccagttttct ctggatgacg tggaagtcct gacggccacg ctggatctgg aggacgtccg     240
gagctacagg gcgggagattt catctcgaaa cctggcggtg agtgctccag tagacacctg     300
tgtgggatgc tcatcaaaga cgtggaaagt ggccccattc gtgcgggcct ggtggaggcc     360
gtgagggtgc agtgcctgaa aagtctgaca gggaagttcc ggacttcccg agcgtggaaa     420
ggggctggtg ccgcagacag aacctgcttc catctgttcc ccgtcatcct ctgcttgggc     480
caggccctga gctggggtga gctggggaca ggcaggcagg tgtatt               526
```

<210> 245
<211> 418
<212> DNA
<213> Homo sapiens

<400> 245

```
ggggcgggcc cccccaggtag gcatggctgc tgcccccagc ccatttcttt tgaatctgtt      60
cactcctatt cactcctact tgccactcct tctattcatt actcactgcc cctgccccta     120
gtccccatgg taccccctgag ccatgggcat ttcctgagcc ccactcagca ggctctgctt     180
cccccaggtc ctggtgaacg agggcggtgg ctttgaccgg gcctctggct ccttcgtagc     240
ccctgtccgg ggtgtctaca gcttccggtt ccatgtggtg aaggtgtaca accgccaaac     300
tgtccaggtg acctcagcac tggcccccat ccccggctca ggagggtggg gagggggaag     360
aaggggagcc cagctgacct ccgggtggac tctccattga cctgtgtcct ggacgaaa      418
```

<210> 246
<211> 706
<212> DNA
<213> Homo sapiens

<400> 246

```
acctcatatt attggagcag aagatgatga ttttggtact gaacatgaac agatcaatgg      60
acagtgcagc tgtttccaga gcattgaatt gctaaaatct cgcccggctc atttggctgt     120
tttcttacgc catgtagttt cacaatttga ccctgcgact ttgctttgtt atctctattc     180
agacctgtat aaacatacca attccaaaga aactcgtcgc atcttccttg agtttcatca     240
gttctttcta gatcgatcag cacacctgaa agtttctgtt cctgatgaaa tgtctgcaga     300
tctagaaaag agaagacctg agctcattcc tgaggatctg catcgccact atatccaaac     360
tatgcaagaa agagtccatc cagaagttca aaggcactta gaagattttc ggcagaaacg     420
tagtatggga ctgaccttgg ctgaaagcga gctgactaaa cttgatgcag agcgagacaa     480
ggaccgattg actttggaga aggagcggac atgtgcagaa cagattgttg ccaaaattga     540
agaagtattg atgactgctc aggctgtaga ggaagataag agctccacca tgcagtatgt     600
tattctcatg tatatgaagc atttgggagt aaaaagtgaaa gagcctcgaa atttggagca     660
caaacggggt cggattggat ttcttcccaa aatcaagcaa agtatg              706
```

<210> 247
<211> 439
<212> DNA
<213> Homo sapiens

<400> 247

```
caagggaggg gggttgatcc cctggcacag gtcgaggccc tggacccaca tcctttgtct      60
gcctccccac cccacagtgc ccgttcatcg acgatttcat cctggccctc cataggaaga     120
tcaagaatga gcccgtggtg tttcctgagg ggccagaaat cagcgaggag ctcaaggacc     180
tgatcctgaa gatgttagac aagaatcccg agacgagaat ggggtgcca gacatcaagt     240
tgcacccttg ggtgaccaag aacggggagg agcccttcc ttcggaggag gagcactgca     300
gcgtggtgga ggtgacagag gaggaggtta agaactcagt caggctcatc cccagctgga     360
ccacggtgat cctggtgaag tccatgctga ggaagcgttc ctttgggaac ccgtttgagc     420
cccaagcacg aatggcgaa                                                439
```

<210> 248
<211> 730
<212> DNA
<213> Homo sapiens

<400> 248
cccacgcgtc cggaataaag atagataaga cttccgatgg accaaaactt ttcttaacag   60
aagaagatca aaagaaactt catgattttg aagagcagtg tgttgaaatg tatttcaatg   120
aaaaagatga caaatttcat tctgggagtg aagagagaat tcgtgtcact tttgaaagag   180
tggaacagat gtgcattcag attaaagaag ttggagatcg tgtcaactac ataaaaagat   240
cattacaatc attagattct caaattggcc atttgcaaga tctttcagcc ctgacggtag   300
atacattaaa aacactcact gcccagaaag cgtcggaagc tagcaaagtt cataatgaaa   360
tcacacgaga actgagcatt tccaaacact ggctcaaaa cttattgat gatggtcctg   420
taagaccttc tgtatggaaa aagcatggtg ttgtaaatac acttagctcc tctcttcctc   480
aagggatct tgaaagtaat aatccttttc attgtaatat tttaatgaaa gatgacaaag   540
atccccagtg taatatattt ggtcaagact acctgcagt accccagaga aaagaattta   600
attttccaga ggctggttcc tcttctggtg ccttattccc aagtgctgtt tcccctccag   660
aactgcgaca gagactacat ggggtagaac tcttaaaaat atttaataaa aaacaaaaaa   720
aaagggcggc   730

<210> 249
<211> 466
<212> DNA
<213> Homo sapiens

<400> 249
attgctgccg ctggatcgac tgctttgcct tgtacgacca gcaggaggag ctcgtgcggc   60
acatcgagaa ggtccacatc gaccagcgca aaggggagga cttcacttgc ttctgggccg   120
gttgccctcg aagatacaag cccttcaacg cccgctataa actgctgatc cacatgagag   180
tccactctgg ggagaagccc aacaagtgta cgtttgaagg ttgcgagaag gccttttcaa   240
ggcttgaaaa tctcaagatc cacttgcgga gccacacagg cgagaagccg tatttgtgcc   300
agcatccggg ttgtcagaag gccttcagta actccagtga ccgcgccaaa caccagcgga   360
cgcatctgga cactaaacct tatgcttgtc aaattccagg atgtaccaaa cgctacacag   420
acccaagttc cctaagaaag catgtgaagg cacattcttc caaaga   466

<210> 250
<211> 963
<212> DNA
<213> Homo sapiens

<400> 250
ggagcggctg ccacggaaaa cgcctggccg gacggtggct ggcggccctg cctgggcgcg   60

108

```
gagggcggcg gtggcgggcc ccgcggcctt ctctcagctt cctttctcct cacgacggcc    120
tccacagtcc ggagcccggc ggagcccgga cctgggggg agagctgcct ccacggccgg     180
gcacccagac cccaccgtcg cagtcgccac cacctcagtc catccttggt accggcaatg    240
ggcttcgtat cctccagtgc acttgtaact gacttggaca cggaatacta agaactcact    300
tctgtcctca tcccagtcgc gccggcggtg accatctcgg ctcttttggg cttaactgcc    360
gctcctctgg actctgtctg actttggggg caccatggac caaagtggga tggagattcc    420
tgtgaccctc atcattaaag caccgaatca gaaatacagt gaccagacta ttagctgctt    480
cttgaactgg accgtgggga aactaaaaac gcatctatct aacgtttacc ctagcaaacc    540
agtaagtgtg taaaagctgg gggcagctgc tctgagcagc agcttttcgt gccgtgtacc    600
ctcctttttc ctgcttctcc cctccagtct tgaatcaaat aggtctcttt tggtagaccg    660
cgaggtattt tgagttctga ggttgtgtct cctgagtgtt cgaaccatca ttaatatttt    720
cctgatgagg ttcagttaat tagtaagagg aagcagaaat atcaagggac ttaagaattg    780
gcaggcaaag accgggcgcg gtggctcacg cctgtaatcc cagcactttg ggaggccaag    840
gcgggcggat cacgaggtca ggagttcgag accagcctta ccggcatggt gaaaccctgt    900
gtctactgaa aatacaaaaa ttaactgggc gtggtggcgc atgcttgtaa tcccagctac    960
tcg                                                                   963
```

```
        <210> 251
        <211> 894
        <212> DNA
        <213> Homo sapiens




        <400> 251
gcggggaccc ggatgtgtgt ggtggcggcg gccgaagagc ttgtgtgcgg agctgagagg     60
cctatggatg aggaggacgc ggcggccccg gtttgttctc atgaacaaga tggatgacct    120
caacctgcac taccggtttc tgaattggcg ccgggggatc cgggagattc gagaggtccg    180
agctttccga tatcaggaga ggttcaaaca tatccttgta gatgagatat ctttaagtta    240
tcatggaaac tctggtgaag ttggctgcta cgtggcttct cgacccctga ccaaggacag    300
caattatttt gaggtgtcta ttgtggacag tggagtccgg ggcaccattg ctgtggggct    360
ggtccctcag tactacagct tggatcacca gcctggctgg ttgcctgact ctgtagccta    420
ccatgctgat gatggcaagc tgtacaatgg ccgagccaag ggccgccagt ttgggtcaaa    480
gtgcaactcc gggaaccgga ttggctgtgg cattgagcct gtgtcctttg atgtgcagac    540
cgcccagatc ttcttcacca aaaatgggaa gcgggtgggc tctaccatca tgcccatgtc    600
cccagatgga ctgttcccag cagtgggcat gcactccctg ggtgaggagg tgcggctgca    660
cctcaacgct gagctgggcc gtgaggacga cagcgtcatg atggtggaca gttacgagga    720
tgaatggggc cggctacatg atgtcagagt ctgtgggact ctgctggagt acttagggaa    780
gggcaaaagc atcgtggatg tggggctggc ccaggcccgg cacccactca gcacccgcag    840
ccactacttc gaggtggaga tcgtggaccc tggagagaaa tgctacatcg ccct          894
```

```
        <210> 252
        <211> 861
        <212> DNA
        <213> Homo sapiens




        <400> 252
tcccgggtcg acgatttcgt ctggagtgtt agcaccagta ctggatgtga cagcaggcag     60
aggagcactt agcagcttat tcagtgtccg attctgattc cggcaaggat ccaagcatgg    120
aatgctgccg tcgggcaact cctggcacac tgctcctctt tctggctttc ctgctcctga    180
```

```
gttccaggac cgcacgctcc gaggaggacc gggacggcct atgggatgcc tggggcccat    240
ggagtgaatg ctcacgcacc tgcggggag gggcctccta ctctctgagg cgctgcctga    300
gcagcaagag ctgtgaagga agaaatatcc gatacagaac atgcagtaat gtggactgcc    360
caccagaagc aggtgatttc cgagctcagc aatgctcagc tcataatgat gtcaagcacc    420
atggccagtt ttatgaatgg cttcctgtgt ctaatgaccc tgacaaccca tgttcactca    480
agtgccaagc caaaggaaca accctggttg ttgaactagc acctaaggtc ttagatggta    540
cgcgttgcta tacagaatct ttggatatgt gcatcagtgg tttatgccaa gtaagtgctg    600
atttgttctc attcaacttg tccagagggt ttcaatgtct ttgtgtaaat ggtttacata    660
gtctcactct ctgaatcact catctttaca ctttttagag tttgtaaatg gtgaaagatt    720
tgaaaattaa ggtatgattt cagtgaaaag taccaagtgt tgtattgtgc gaaggaaaag    780
tagactagag ttattttct ttccttgagt gtcacttgaa tataaagaa taaaaatttt    840
tgaatagtgt taaaaaaaaa a                                              861
```

```
        <210> 253
        <211> 556
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 253
caggctgtta agacaagagc ttgtggtgct ttgccacctt caccacccca gtttgatatc     60
tttgctggca gctgggattc gtccccggat gttggtgatg gagttagcct ccaagggttc    120
cttggatcgc ctgcttcagc aggacaaagc cagcctcact agaaccctac agcacaggat    180
tgcactccac gtagctgatg gtttgagata cctccactca gccatgatta tataccgaga    240
cctgaaaccc cacaatgtgc tgcttttcac actgtatccc aatgctgcca tcattgcaaa    300
gattgctgac tacggcattg ctcagtactg ctgtagaatg gggataaaaa catcagaggg    360
cacaccaggg tttcgtgcac ctgaagttgc cagaggaaat gtcatttata accaacaggc    420
tgatgtttat tcatttggtt tactactcta tgacattttg acaactggag gtagaatagt    480
agagggtttg aagtttccaa atgagtttga tgaattagaa atacaaggaa aattacctga    540
tccagttaaa gaatag                                                    556
```

```
        <210> 254
        <211> 435
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 254
caaaggccag taatagtacc catgagtttc gtattggcct acctgagggg tgggaatccg     60
aaaaaaaggc agttatcccc ctggggatcg ggccacccct gactttaatc tgcctagggg    120
ttctgggggg tattctcatc tacgggagga aaggcttcca aactgcccac ttttacttaa    180
aggacagtcc atcccctaaa gtaatatcca ccctccacc acctatcttt ccaatttcaa    240
aggaggtcgg accaattcca ataaagcact ttccaaagca tgtggcaaat ttacatgcaa    300
gtaggggt tactgaaaaa tttgaaacac tgaaaaagtt ttaccaggaa gggcaaagct    360
gtactgttga cttaggtatt acagcaaaca gctccaacca cccagacaac aggcacagga    420
atcgatcctt aattg                                                     435
```

```
<210> 255
<211> 698
<212> DNA
<213> Homo sapiens



<400> 255
cctcatttcc tgatcgaaca gcctcacttg tgttgctgtc agtgccagta gggcaggcag      60
gaatgcagca gagaggactc gccatcgtgg ccttggctgt ctgtgcggcc ctacatgcct     120
caccagccat acttcccatt gcctccagct gttgcacgga ggtttcacat catatttcca     180
gaaggctcct ggaaagagtg aatatgtgtc gcatccagag agctgatggg gattgtgact     240
tggctgctgt catccttcat gtcaagcgca gaagaatctg tgtcagcccg cacaaccata     300
ctgttaagca gtggatgaaa gtgcaagctg ccaagaaaaa tggtaaagga aatgtttgcc     360
acaggaagaa acaccatggc aagaggaaca gtaacagggc acatcagggg aaacacgaaa     420
catacggcca taaaactcct tattagagag tctacagata aatctacaga gacaattcct     480
caagtggact tggccatgat tggttagtct cgctctgtca cacaggctgg agggcagtgg     540
cgggatctcg gttcacccca acctttgcct cacgggttca agggattctc gtgcctcagc     600
cttccaagtg gctgggattg caggtgtgcg ccagtacgcc tggctagttt tagtattttt     660
tgttacagac ggggtttcac catgttggct gggctggt                            698



<210> 256
<211> 736
<212> DNA
<213> Homo sapiens



<400> 256
gtttgaacag cccggaaacc cgggcgaccc acgcgtacga actccgcccc catggggggcc      60
ccactttttc gctttgattc cttcttcccc caaagaggtc ccagctaccc catcctccag     120
aagggacccc attgccccaa cagcgactct tctctctaaa aagaccccag caactctagc     180
ccccaaagag gccctcattc ccccagctat gactgttccc tcccctaaaa agaccccagc     240
aattccaacc cccaaagaag ccccagctac cccatcctcc aaagaggcct ccagtccccc     300
agcagtgact ccttccactt acaaaggggc cccatccccc aaagagctcc tcattccacc     360
agctgtgact tctccttccc ccaaagaggc acctactcct ccagctgtga ctcctccatc     420
ccccgaaaag ggcccagcaa ctccagcccc caaagggact cccacttccc cacctgtgac     480
tccttcctcc ctcaaagact cccctacttc cccagcttct gtcacatgta aaatggggc     540
cactgttcct caagcatcta aagggcttcc agcaaagaaa ggccccacag ctctgaaaga     600
agtacttgtt gccccagctc cagaaagcac gccaatcatc acagctccca ctcggaaagg     660
tccacagacc aaaaagagtt ctgctacttc acctcctata tgcccagatc cctcagctaa     720
gaatggttct aaagga                                                     736



<210> 257
<211> 77
<212> DNA
<213> Homo sapiens
```

111

```
<400> 257
ctccgcctcc caaagtactg ggattacagg tgtgagccac cgtgcccagc caagaccttg        60
tatctttaaa aaaaaaa                                                        77




<210> 258
<211> 499
<212> DNA
<213> Homo sapiens



<400> 258
aatgctcctt tggtaagaac aattatatgg ctaaattaat ctcagccacc tagttctaaa        60
tgtagagcaa ggattgcaag ggattatttta gacaagttca tcaattaagt aaaattagac      120
atgaaggata taagaatgaa tgataaagca agctaaaaat ggtgaaacaa gggatgtctg       180
attggaagta gaagatattt atttaggttc taggacatta gtatcagtga ggacagtaat       240
ttcctgcttg tttgtatttc agtgatcaca tacacttctt tacctgataa cgtctctctt       300
ctctaggctg gttttggtta cggcttgcca atttctcgtc tgtatgccaa gtactttcaa       360
ggagatctga atctctactc tttatcagga tatggaacag atgctatcat ctacttaaag       420
gtatcccttg aattcaatag caaaatcctg tttctaaaac cattgctcct tttatagccc       480
tgagtgctat ggtccggag                                                    499




<210> 259
<211> 621
<212> DNA
<213> Homo sapiens



<400> 259
tttcgtgact gtagtcagcc cttagtggat gagagcgcct atgcttcaga aacagcaggc        60
tcccaggatg gacaccccgc cccctgaaga acgcttagag aagcaaaatg aaaaactgaa       120
caaccaggaa gaggagacgg agtttaagga actggacggt ctgagggaag ccttggcaaa       180
cctccgggga ctgtcagagg aggagaggag cgagaaggct atgcttcgct cccgcattga       240
agagcagtcc cagctcatct gcatcctgaa gcggaggtca gatgaggccc tggagcgctg       300
ccagatccta gagctgctca atgcagagct ggaggagaag atgatgcagg aggctgagaa       360
gctcaaggcc cagggtgagt acagtcggaa actagaggaa cgctttatga ccctagcagc       420
caaccacgag ttgatgctcc gcttcaagga tgaatacaag agtgagaaca tcaagctgag       480
ggaggagaat gagaagctga ggctggagaa taacagcctc ttcagccagg ctctgaagga       540
tgaggaggcg aaagtattac agctcacagt ccggtgtgag gccctcactg gggagctaga       600
aacgctgaag gagaggtgtg c                                                 621




<210> 260
<211> 414
<212> DNA
<213> Homo sapiens
```

112

```
        <400> 260
agatccgggt gcgagccacg cgtccgtgca ggtgcaggta ctgaaagagc aactttttgc      60
tgggcgtatg ccttcaccct tccgctcctg cgcactcatg ggaatgtgtg gcagtagaag     120
cgctgataac ttgtcatgcc cttctccatt gaatgtaatg gaaccagtaa gcttctttcc     180
tcttaaatca ctggggaagg gaatgataca acatttcaga cacatagttt ccctagttta     240
gatgaaatat atgtttattt taaatacata atttgataaa ttattgttga ttggaagtga     300
ctttcacctt tgaaagtcca ttgctgtctg aagccactag aaagccacct gaattgcaat     360
agtgatttat ctttctgact aaaggaggta atgcaccata aaaacatgta cagt           414
```


```
        <210> 261
        <211> 620
        <212> DNA
        <213> Homo sapiens
```


```
        <400> 261
gtaaccacca ctactcatag cgttggacga gggcatgagc tacagttgct taatgaagaa      60
ctgagaaaca ttgagcttga gtgtcagaat atcatgcagg ctcacaggct ccagaaagtg     120
acagaccagt atggagacat ctggacattg catgatggag gattccggaa ttataacacc     180
agcatagata tgcaaagggg aaagctagat gacatcatgg agcatccaga aaagtctgac     240
aaggacagtt ctagtgctta caacacagct gagagctgca gaagtactcc gctcactgta     300
gaccgttccc ctgacagttc ccttccaagg gtgatcaacc tcaccaataa gaaaaacctg     360
agaagcacaa tggcagccac ccagtcctct tccggacaga gcagtaaaga gtcgacctcc     420
accaaagcca aaaccactga gcaaggttgt agcgctgaaa gcaaggagaa ggttttagaa     480
ggcagcaagc ttcctgatca agagaaggca gtcagcgaac acatcccCtta cctctctcct     540
taccacagct cctcatatag atatgcaaac atcccagcac acgcccggca ttatcaaagc     600
tacatgcagt taattcaacg                                                 620
```


```
        <210> 262
        <211> 418
        <212> DNA
        <213> Homo sapiens
```


```
        <400> 262
gggtctgggg ctgcctggcc accgtgtcca cccacaagaa gatccaagga ctgccatttg      60
ggaactgcct gcccgtcagt gatggcccct tcaacaatag cactgggatt cctttcttct     120
acatgacagc caaggacccc gtggtggctg atctgatgaa gaaccccatg gcctcgctga     180
tgctgccaga atcagaaggg gagttctgca gaaaaaacat cgttgatccg gaagatcccc     240
gatgtgtcca gttaacgctc actggccaga tgatcgcagt gtctccagaa gaagtagaat     300
ttgccaagca.agccatgttt tcaaggcacc cagggatgag gaagtggcct cgtcaatatg     360
aatggttctt tatgaagatg aggatagaac atatctggct tcagaaatgg tatggagg       418
```

113

<210> 263
<211> 441
<212> DNA
<213> Homo sapiens

<400> 263
```
tttcgtcaga gccgcgggag gacggttgcc tggtattatt agcaagcagc aaatatggcg      60
gtggcgcgcg tggacgcggc tttgcctccc ggagaaggat cagtggtcaa ttggtcagga     120
cagggactac agaaattagg tccaaattta ccctgtgaag ctgatattca cactttgatt     180
ctggataaaa atcagattat taaattggaa aatctggaga aatgcaaacg attaatacag     240
ttatcagtag ctaataatcg gctggttcgg atgatgggtg tggccaagct gacgttgctt     300
cgtgtattaa atttgcctca taatagcatt ggctgtgtgg aagggctaaa ggaactagta     360
catctggaat ggctgaattt ggcaggaaat aatcttatag ccatggaaca gatcaatagc     420
tgcacagctc tacagcatct c                                              441
```


<210> 264
<211> 832
<212> DNA
<213> Homo sapiens

<400> 264
```
tatttcgagc ggcagttggg gcggtaccag agggtgcctg gaaggatacg gcccagctcc      60
acaagagcga ggaggcgaag cgggtgctgc ggtattacct cttccagggc cagcgctata     120
tctggatcga gacccagcaa gccttctacc aggtcagcct cctggaccat ggccgctctt     180
gtgacgacgt ccaccgctcc cgccatggcc tcagcctcca ggaccaaatg gagaggaagg     240
ccatttacgg ccccaacgtg atcagcatac cggtcaagtc ctaccccag ctgctggtgg     300
acgaggcctt cagcatcgcg ctgtggctgg ctgaccacta ctactggtac gccctgtgca     360
tcttcctcat ttcctccatc tccatctgcc tgtcgctgta caagaccaga aagcaaagcc     420
agactctaag ggacatggtc aagttgtcca tgcgggtgtg cgtgtgccgg ccagggggag     480
aggaagagtg ggtggactcc agtgagctag tgcccggaga ctgcctggtg ctgtcccagg     540
agggtgggct gatgccctgt gatgccgccc tggtggccgg cgagtgcatg gtgaatgata     600
gctctctgac aggagagagc attccagtgc tgaagacggc actgccggag gggctggggc     660
cctactgtgc agagacacac cggcggcaca cactcttctg cggaaccctc atcttgcatg     720
cccgggccta tgtgggaccg cacgtcctgg cagtggtgac ccgcacaggt atgagccggg     780
aggctgggct tgagagagat ccgggctcag caccccttgaa gaggtggagt gg           832
```


<210> 265
<211> 714
<212> DNA
<213> Homo sapiens

<400> 265
```
tttcgtcggg ggcgggctcc accttcacct ctgccttctg ctctgcttca tgctgcccga      60
```

114

```
ggacgctgcc atggctgtgc tgacggcctc caaccacgtg agcaacgtca ccgtgaacta     120
caacatcacc gtggagcgga tgaacaggat gcagggcctg cgggtctcta cagtgccagc     180
cgtgctgtcc cccaatgcca cgctggcact gacggcgggc gtgctggtgg actcggccgt     240
ggaggtggcc ttcctgtgga cctttgggga tggggagcag gccctccacc agttccagcc     300
tccatacaac gagtccttcc cggttccaga ccccctcggtg gcccaggtgc tggtggagca     360
caatgtcacc cacacctacg ctgccccagg tgagtacgtc ctgaccgtgc tggcatctaa     420
tgccttcgag aaccggacgc agcaggtgct gatccgcagt ggccgggtgc ccattgtgtc     480
cttggagtgt gtgtcctgca aggcacaggc cgtgtacgaa gtgagccgca·gctcctacgt     540
gtacctggag ggccgctgcc tcaattgcag cagcggctcc aagcgagggc ggtgggctgc     600
acgtacgttc agcaacaaga cgctggtgct ggatgagacc accacatcca cgggcagcgc     660
aagcatgtga ctggtgctgc ggcggggcgt gctgcgggac ggcgagggat acac           714
```

<210> 266
<211> 1872
<212> DNA
<213> Homo sapiens

<400> 266
```
cccggaattc ctgggtcgac tatttcgtgg aaaggctgcc actctgcatg tgcacagtga      60
ccagaagccc cttcacgatg gggccctcgg gtcgcagcag aacttggttc gcatgaagga     120
ggcgctgagg gccagcacca tggacgtcac cgtggtcctg cctagtgggc tggagaagag     180
gagcgtgctc aatgggagcc atgcgatgat ggacctactg gttgaacttt gccttcagaa     240
ccacctgaat ccatcccacc atgcccttga aattcggtct tcagaaaccc aacaaccttt     300
gagtttttaag ccaaatactt tgattgggac cctgaatgtg catactgtgt ttctgaaaga     360
aaaagttcct gaagagaagg ttaagcctgg tcccctaag gtgcctgaga aatctgtgcg     420
tttggtcgtg aattacctgc ggacacaaaa agctgttgtg cgtgtgagcc ctgaggttcc     480
tctccagaat attctcccag tcatttgtgc aaagtgtgag gtcagcccag agcacgtggt     540
tctcctcagg gacaacattg ccggagagga gctggagctg tccaagtccc tgaacgagct     600
cgggataaag gagctctacg cgtgggacaa cagaagagaa acctttagga aatcatcact     660
tggcaatgat gagacagata aagagaagaa aaaatttctg ggattttttca aagttaataa     720
aagaagcaat agtaagggct gtttaacgac ccccaactcc ccatccatgc actcacgttc     780
tcttacgctg ggtccatccc tctcgctggg cagcatctca ggggtgtccg tgaagtcgga     840
gatgaagaag cgccgagccc·ctcctcctcc aggttcaggg ccacctgtgc aagacaaggc     900
atcggaaaag gtatctcttg ggtcacagat tgatttacag aagaagaagc ggcgagcgcc     960
agctcccccct ccaccacagc caccaccacc gagtcccctg atccccaacc gcactgagga    1020
taaggaggag aacaggaaga gcacgatggt ttattgctgt gcgtcattcc ctactcaggc    1080
caagcgcttc tgatggacgg gcctcttcct gacctcggac ctttcccagt gtctcttctg    1140
ccctggctct gattttcctg ttgttcttcc tcctttcagg ataaaagggc tcattgtata    1200
cccagaattt acttcctttg gggtttacat ataaatgcat taataacaga gatttgtttg    1260
attgaggttt atattttttt gaaggaggta aattatatgc aaatttttagg ttgataatat    1320
tcacctgtct gaaattcact gatacttgga aatgttcctg tgaagaactc tgctttattt    1380
taattcatta ttaattcatg tttttcttat tggatattca gttccagaat ttattgccaa    1440
tttttcttaa aactagattg tatccataaa ttgaccagta tagtcaattt ggatagaact    1500
gaaactttct gtctacctgg taaaactaag tgcctaaaaa catgaactat aaatgtagtt    1560
actaggaact cacaacttat atatactatc cattcaatga tacataggac ccaatgtctt    1620
·tgtgtttttg aggttttcct gttactgtgt actttgccat tttacatagt tcactaaaaa    1680
gaaagaagtg ggagaagaag gggggtctat tcattattct atattatgat tctcttcatt    1740
attctgttct cttcattatt ctattcattt cttcacccat ttattcacta aacagtgaca    1800
tagtacttac ttgatgctag gtattacacc agttttgtgg gctataagag tgaataacaa    1860
gcacgtgacc tt                                                        1872
```

<210> 267
```

```
        <211> 684
        <212> DNA
        <213> Homo sapiens




        <400> 267
tgtagataca gagtagctaa ttctaaaatt catatggaag gcaaagaaac taaattagcc        60
aaaacaattt tgaaaaagat ttcaaaaaaa ttttgaagga atcatgctgc ccagttttaa       120
gacttactat aaagctgtga taatcaaggc aatctggtat ttatgaaagg ataaacacat       180
agatcaatgg aataaagtcc aaaaccagac tcacataaat agcaattgat ttctgacaaa       240
ggtgaaaaga caactcaatg gggaatggag agtttttcaa cagatgattt taaaacaact       300
gaacatccat atgcaaaaaa ataaacctac ctaaatttca cagcttatac aaaaattaac       360
ctaaaatgga tcacggatct aaatgtagaa ctaaatttat aaaattttta gaagaaaaaa       420
atccataggc cgggcacggt ggctcatgcc tgtaatccca gcacttcaga ggctgaggcg       480
ggcagatccg ttgaggtcag ttcaagacca gcctagccta tgtggtgaaa tcccaactct       540
actaaaaata aaaaataaaa aaaaatgggg ctgggagtgg tggtgcacac ctgtagtccc       600
agctacttgg gagactgaag cacaagaatc acttgaaccc agcaggcaga ggttgcagtg       660
agtggagatt gtgccactgc accc                                              684
```

```
        <210> 268
        <211> 453
        <212> DNA
        <213> Homo sapiens




        <400> 268
ggtcgacgat ttcgcccgcc gtcggacgag gagcgggagc cgtgggagcc gtggacgcag        60
ctgcgcctgt cgggccacct gaagccgctg cactacaatc tgatgctcac cgccttcatg       120
gagaacttca ccttctccgg ggaggtcaac gtggagatcg cgtgccggaa cgccacccgc       180
tacgtagtgc tgcacgcttc ccgagtggcg gtggagaaag tgcagctggc cgaggaccgg       240
gcgttcgggg ctgtccctgt agccggtttt ttcctctacc cgcaaaccca ggtcttagtg       300
gtggtgctga ataggacact ggacgcgcag aggaattaca atctgaagat tatctacaac       360
gcgctcatcg agaatgagct cctgggcttc tttcgcagct cctatgtgct ccacggggag       420
agaagattcc ttggggttac tcagttttcg cct                                    453
```

```
        <210> 269
        <211> 525
        <212> DNA
        <213> Homo sapiens




        <400> 269
ggcacgagaa ctggtgctta atttaatgcc aattcatgat gtaggtttct aagcagcaca        60
taaaagggc ttttaggta gcactgagta ctttactaaa aatacaaaaa ttagccaggg       120
ggggggtgc acgtctttaa tcccagctac tcagggcggg ggccaggggg tggggtaggg       180
tggggctga gacaggagaa gcacttgaac ccaggaggcg gaggttgcag tgagctgaga       240
ttgtgctact gtactccaac ctgggcaaca aacagagtga gacactgtct caaataaata       300
```

```
aataaataga taaataaaat aaaataaaat aaaaagaact cgaccctttt tacaatagct    360
aaaggaaaat aaaatactta agaatatact taaccaagga ggtgaaagac ctctacaaag    420
aaaactacaa aacactgctg aaagaaatca cagatgacac aaacaaaaac acatcccaag    480
ctcatggaca ggtagaatca atactgtgaa aatgactata ctgcc                   525
```

```
        <210> 270
        <211> 880
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(880)
        <223> n = a,t,c or g
```

```
        <400> 270
cccagtccca cattgagccc tgatcccatc caagtccata gacttggcct ctgaccaaac    60
ctgaccctgc acttgtcact taaggtggtc ccatattcag ctcagaccct gaaccgagct    120
ctgaccctgg cttctgactg aatctgtgac agactaaggc ctgaccctgg ccctatacca    180
cgtctccacc cgtgtcctca actgagtgct gaccccaaac ctagacagcc ctacctgatc    240
cttcccccag gcctgtcccc gccgcttcat ctcaaaagtt gaaggtgagg agccggtaaa    300
caggtctgga gcctggtctc agactcagcc tgagcaagct cagtctgggg tcattgggcc    360
tgtaaccccg ggcaggccct tgttagggat gcagggtctc accctagggg tataagggat    420
ttctgtgccc atcagaactt nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn    480
nnnnnnnnnn nnnnnnnnnn attttgctgt tagcatatgt gatgaccttg acttcacctc    540
cctggcgcca atatcctctt ctgtaaaatg gcttatgcat tacaaagtga ggtcctgcca    600
gtgactacac ctagaggcat taagtgcctt tgtggactcc tgccctgcac ctcacctctc    660
ccagcttttt aaccccctga ggaaccttct taccttgagt ccctcacccg ctacaggcca    720
tccatgagca gatgaactgc aaggagtatc aggaggacct ggccctgcgg gctcagaacg    780
atgcggctgc ccggcggccg tcagagatgt ttaaggtgag gctggctcag ggtcgtggcc    840
tagcatcttt aagttctggg atccagtctg gggtagggag                         880
```

```
        <210> 271
        <211> 1066
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(1066)
        <223> n = a,t,c or g
```

```
        <400> 271
tgaccctcgt aagngcgttg gaattccctc acctgtgtgg tcctcacctt cctgggccac    60
cgcctgctga acggtttct ggtgccaaag ctgaggaggt ttctcaagcc tcagggccat    120
ccccgcctgc tgctctggtt taagaggtga gtgagctcac agccccgagg cagggcaggg    180
gagggcccct gagctgaggg gttggctcca gggttatggc cagggctgga ggaggaggaa    240
ggctctgtgt catggagaac tctctggcgc cccagggcag gagccagtgg gtggcttcaa    300
```

```
acaaagcagc atctttgtgg tgtttcacca gttcttagtc ccagttacag caggtgactg   360
tggtggacga aaactggact caacagtttc ctccattcag ggatcccagg ccatggagca   420
aggagggccc gaatcagtac ctccctcaga tcacctggac agtgtgagac aaaaagccgc   480
agggaccatc cctggagggg gattcagcag gctcgatcgg ggtccaggtg ctggtatttt   540
tcattagcct ccaggggatt ctgatgtagc cagcagcgtc cttggacaac agtttgagat   600
ctgctgcttt tcaaactgga ttccttggag cgctggaaat ctcagcgatg tcacagggca   660
ggagagggag gttgtggagg gaaaattcag acttcccgcc cagcccacca tttcaccagg   720
cagctctaaa tttatgtgtt ttataagcca aggttcacac aaaaaagaaa attcgctggg   780
gggaaaaaaa cagtttctat ggcttaaaaa aaagtctgaa gaccaccagt ctatttcaat   840
actctatttt gttgatgaag aagctggtga ccaaagatac ccaaagacta agtcaggggg   900
atgcaggggt acaggggtgc ctctcacttt cccaaagtga gatccacata ccacagcaaa   960
atgatttgag ccagcctgtg gatgaacaca tttaaaattt tatttataaa tacatttact  1020
gttacatttg acttctcttt attaaataca tttgtgattt ataaaa               1066
```

```
<210> 272
<211> 659
<212> DNA
<213> Homo sapiens
```

```
<400> 272
tacggggaat tcgtcaccta ccaagggtg gctgtgacgc ggagccggaa agaaggcatc    60
gcacacaact acaaaaatga gacggagtgg agagcgaaca tcgacacagt gatggcgtgg   120
ttcacagagg aggacctgga tctggtcaca ctctacttcg gggagccgga ctccacgggc   180
cacaggtacg gccccgagtc cccggagagg agggagatgg tgcggcaggt ggaccggacc   240
gtgggctacc tccgggagag catcgcgcgc aaccacctca cagaccgcct caacctgatc   300
atcacatccg accacggcat gacgaccgtg gacaaacggg ctggcgacct ggttgaattc   360
cacaagttcc ccaacttcac cttccgggac atcgagtttg agctcctgga ctacggacca   420
aacgggatgc tgctccctaa agaagggagg ctggagaagg tgtacgatgc cctcaaggac   480
gcccacccca agctccacgt ctacaagaag gaggcgttcc ccgaggcctt ccactacgcc   540
aacaacccca gggtcacacc cctgctgatg tacagcgacc ttggctacgt catccatggg   600
gtgagtcgcc tgctggaggc accacctcca ggggctccct ccccaggctc tgggtcttc    659
```

```
<210> 273
<211> 412
<212> DNA
<213> Homo sapiens
```

```
<400> 273
acgcgacttc tcgggtcgac ccacgcgtcc gcacatataa cacatcacgc accttttgag    60
tggctacctt ggttctcgcc tttcttttca agagaccatt cttcaacaga actgtaagga   120
ttcttcttgg ctgaatcaga tgtgacgcat cccacttctg cgtttgaggt ctagcacata   180
ccgctccaag ggctttgacg tcacagtgaa gcactcacac ggaagctgga cgggcttcgg   240
tggggaagac ctcgccacca tccccaaagg gttgaatact tattttcttg tcaacattgc   300
cactattttt gaatcaaaga atttcttttt gcctgggatt aaatggaatg gaatacttgg   360
cctatcttat gccacacttg ccaagccatc aagttctctg gagaccttct tc          412
```

/

```
        <210> 274
        <211> 522
        <212> DNA
        <213> Homo sapiens



        <400> 274
gaattaagag ttactccggg ccaaatggcc ggagttgtca gatctggcag cgtcttcgct         60
ggggctccag ggagctgctg ctggggtgga agctctcaca ctctttctcc acgtgccctt        120
tccagttccc tgacatcgtg gagttctgcg aggccatggc caacgccggg aagaccgtaa        180
ttgtggctgc actggatggg accttccaga ggaaggtaag gcgtctgatc caggtctgga        240
gctgggattg aggagggcaa gaggcttctg gatgggcaca gagacaccag ctctgggtga        300
ccagggctca gccaccacag ggttacggcc gagctgctca ggccttggct gagccaaggg        360
actccatggt ctgtgcagac tgcgtgccat ctgttgcggc aggtgctttg aattggcaaa        420
gggacagagc cgggcatggt gctctggggg ttgggggaag gactaaggtc agagcaaact        480
ctcctggctt cagtacttgt gaatcagagg gtttaaaaga aa                           522
```

```
        <210> 275
        <211> 650
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(650)
        <223> n = a,t,c or g



        <400> 275
gaattctgct tatgcaccaa tttgcagctc ctgcaaccat gatgcagcct cacccggacc         60
tttcaacatt ttcccttttca cctaaaactg tattttttctc tgctaagacc ggctaccta        120
ctttcatttt cctttcactc ttcttggctc ttttgggcct tttaggaatt tgggatgatt        180
caggctctga caggcatggt actagattta ttttaggctg ctcttttgct gttgtccaac        240
aggccaagga gagatttaaa tgatttatcc aatatttgct aaatagtcat gtgtttcatt        300
tatcccatat atagttcagc cttaatattg ttttgtttt gatttgttac actagtgcat         360
acatagagac gtgaagccag aaaatatcct catcacgaaa cattccgtga ttaagctttg        420
tgactttgga tttgctcggc ttttgactgg accgagtgac tactatacag actacgtggc        480
taccaggtgg taccgctccc ctgagctgcn ggtgggggac acgcagtacc ggccccccgg        540
tgggatgttt ggggcaattg gctgtgtctn tgctgagctn gctgtcaggg aagtgcctct        600
ggtggccagg aaaatcggaa tgttggatca gctgtatctg attaggaaga                   650
```

```
        <210> 276
        <211> 497
        <212> DNA
        <213> Homo sapiens
```

119

```
        <400> 276
cccttgatga ccatctagtc agtgcggtgg aattcccatg acagacgtat ctgactggtc    60
atgtggtcag caagcctcgc ctttggtcag gccctggagg gtacagctga cccatagggc   120
cacttccatg gcactgggca agtggctgta ttggaaatga agtcgttgcc cccgatttct   180
ttggggccag gttgagcttt cctgcccaga gcacggaggc taaaggggt gggctttgga    240
ctggattggg gctgacctca gcctacacct gcaggaggag gtggagacag aggtggcctg   300
ggaggaatgt gggcacgtcc tactgtcact gtgctacagc tctcagcagg gtggcttgct   360
ggtaggtgtg ctgcgctgcg cccacctggc ccccatggat gccaatggtt actcggaccc   420
cttcgtgcgc ctgtgagtga actggggtag gcaggcggga ggtgaggata aggcggtgac   480
tcctcacctc tccaggg                                                   497
```

```
        <210> 277
        <211> 428
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 277
tggtggaatt ctcgccatgg aatatgcacc aggcggcact ctggctgagt tcatccaaaa    60
gcgctgtaat tccctgctgg aggaggagac catcctgcac ttcttcgtgc agatcctgct   120
tgcactgcat catgtgcaca cccacctcat cctgcaccga gacctcaaga cccagaacat    180
cctgcttgac aaacaccgca tggtcgtcaa gatcggtgat ttcggcatct ccaagatcct   240
tagcagcaag agcaaggcct acacggtggt gggtaccca tgctatatct cccctgagct      300
gtgtgagggc aagccctaca accagaagag tgacatctgg gccctgggct gtgtcctcta   360
cgagctggcc agcctcaaga gggctttcga ggctgcgaac ttgccagcac tggtgctgaa   420
gatcatgg                                                             428
```

```
        <210> 278
        <211> 427
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 278
gtccagtgtg gtggaattca ccaggtgtcc ggggcagtgg tagtatctgg gctgctgcag    60
ggcatgatgg ggctgctggg gagtcccggc cacgtgttcc cccactgtgg gccctggtg     120
ctggctccca gcctggttgt ggcagggctc tctgcccaca gggaggtagc ccagttctgc   180
ttcacacact ggggggttggc cttgctgtac gtgagtcctg agaggcgtgg gatggtgccc    240
agtgggggtg tatgggggga ctaggggagg gcagaactgc tggtcctatc agattcagca   300
gcgactggaa tagggacata ttttatattt ggaatccaag acttttcctt gattcatctg   360
gtctccttga atttcacact gttttctgct gtcccccaag gtcacttcct attccttcca   420
tgggagt                                                              427
```

```
        <210> 279
```

120

<211> 561
<212> DNA
<213> Homo sapiens

<400> 279

```
cccagaatga ccgggtcgac ccacgcgtcc gcacccagct atggaggcag ctgcaggaac     60
aacttgtttt accgagaaga aacctacact ccaaaagctg agacggacga gatgaatgag    120
gtggaaacgg ctcccattcc tgaagaaaac catgtttggc tccaaccgag ggtgatgaga    180
cccaccaagc ccaagaaaac ctctgcggtc aactacatga cccaagtcgt cagatgtgac    240
accaagatga aggacaggtg catagggtcc acgtgtaaca ggtaccagtg cccagcaggc    300
tgcctgaacc acaaggcgaa gatctttgga agtctgttct atgaaagctt cgctagcata    360
tgccgcgccg ccatccacta cgggatcctg gatgacaagg gaggcctggt ggatatcacc    420
aggaacggga aggtccccct cttcgtgaag tctgagagac acggcgtgca gtccctcagg    480
taactactct gtgatcgggg ctctgtgaaa cggttttcct gtttatgacg gtgttgttga    540
aattttgaaa aataccacac a                                              561
```

<210> 280
<211> 792
<212> DNA
<213> Homo sapiens

<400> 280

```
attttgatg ccatgtggct acattggttt tagaatacta ataaaatcca ttgcttttaa     60
aataaataaa taaaccccat agcacatcct ccatacaaca tctgttgtcc ctcaagatac    120
aattgttacc actatcatct aaccattatt ttatgataac tttaaaatat caacttggca    180
agaaaatatt ccacaaaaca cactctgcct ttttacttta aagagtcctt ggctacctgg    240
gccaatatta ttctcatttg taggatttag gttccacaga atataatatg tgccttttc     300
tgtgttccct gcagatttgc aagtaccatc cctttttggg gccttacttt gcacctccag    360
catctgggaa acaatgtttt cctgttgcag actctctttg gtgcagtcac cctcctggcc    420
aattgtgttg caccttgggc actgaatcac atgagccgtc gactaagcca gatgcttctc    480
atgttcctac tggcaacctg ccttctggcc atcatatttg tgcctcaaga aatgcagacc    540
ctgcgtgtgg ttttggcaac cctgggtgtg ggagctgctt ctcttggcat tacctgttct    600
actgcccaag aaaatgaact aattccttcc ataatcaggg gaagagctac tggaatcact    660
ggaaactttg ctaatattgg gggagccctg gcttccctcg tgatgatcct aagcatatat    720
tctcgacccc tgccctggat catctatgga gtctttgcca tcctctctgg ccttgttgtc    780
ctcctccttc cg                                                        792
```

<210> 281
<211> 1047
<212> DNA
<213> Homo sapiens

<400> 281

```
ggtcttggtt tcaagggatc atatgaaaag tgcccagcag ttcttccagt tggtgggagg     60
```

```
      atcagctagt gaatgtgata caataccagg gaggcagtgc atggcttcct gtttcttcct      120
      gcttaagcaa tttgatgatg ttttgattta cctcaactca tttaagagcc acttctataa      180
      tgatgacatc tttaacttta attatgccca agccaaagct gcaacaggca ataccagtga      240
      gggcgaagag gcgttcctct tgatccaaag tgagaagatg aaaaatgatt acatttacct      300
      cagctggtta gctcggggct atattatgaa taagaaacca agactagcct gggaacttta      360
      tcttaagatg gaaacctccg gcgagtcctt cagtctctta cagctcattg ctaatgactg      420
      ctacaagatg ggccagtttt actattctgc caaagctttt gatgtccttg agaggctgga      480
      tcctaaccct gaatattggg aaggcaaacg gggtgcctgt gtgggcattt tccagatgat      540
      catagctggg agagaaccca aagagaccct tcgagaagtg ctccatttac tgagaagcac      600
      aggtaacacc caagtagaat acatgatccg gatcatgaag aaatgggcca agaaaacag       660
      agtgtccatc ctaaaatagc gccagtgcac taggaaccag cttctacttt gacataaaac      720
      tggaaatcat tttcactcca gctttaatct gtgatacagg gctctgtttt attgacattt      780
      tccttccttg ctctttaagc ctcaaggtca gagactgact tgctgagact tagtctcctg      840
      gctgaacaga gtgccatagt ctgtgaccct gtatgatcct agtagcaata agatttttgga      900
      cttatctggt gcctttcttc caaaaatgct cagagtactt ttatgcaatt tactgacttt      960
      aaggaaaaca gtataacttt tttttgttag cattttatgg cattgtctcc tggctgcaat     1020
      aacaaacatc tttgatgttc aagaatc                                        1047
```


      <210> 282
      <211> 357
      <212> DNA
      <213> Homo sapiens

      <400> 282
```
      ctttaaaagt ttctgatgaa ttagtgcagc aatatcaaat taaaaaccag tgtctttcag       60
      caatagcatc tgatgcagaa caagaaccta aaattgatcc atatgcattt gttgaaggag      120
      atgaggaatt ccttttttcct gataaaaaag atagacaaaa tagtgagaga gaagctggaa      180
      aaaaacacaa ggtaagagaa atcacagtac accaaagggt cactgttgat tttgtagcac      240
      tgcatatagt aacactctta ctaccacagt tatctcactt cttttgtctt agaatagaaa      300
      gagtaatcat ttatttagaa aaacctattt ttgcccggct gcggtggctc atgcctg        357
```


      <210> 283
      <211> 536
      <212> DNA
      <213> Homo sapiens

      <400> 283
```
      ctggggtgcc ccgcaacctg ccttccagcc tggagtatct gctgttgtcc tacaaccgca       60
      tcgtcaaact ggcgcctgag gacctggcca atctgaccgc cctgcgtgtg ctcgatgtgg      120
      gcggaaattg ccgccgctgc gaccacgctc ccaacccctg catggagtgc cctcgtcact      180
      tcccccagct acatcccgat accttcagcc acctgagccg tcttgaaggc ctggtgttga      240
      aggacagttc tctctcctgg ctgaatgcca gttggttccg tgggctggga acctccgag       300
      tgctggacct gagtgagaac ttcctctaca aatgcatcac taaaaccaag gccttccagg      360
      gcctaacaca gctgcgcaag cttaacctgt ccttcaatta ccaaaagagg gtgtcctttg      420
      cccaccttgt ctctgggccc cctttccttc ggggaagcct gggtcgcccc ttgaagggag      480
      ctgggacatg gcacggcaat ctttctttcc cgctccactt cgaatggggg aagacc         536
```

```
<210> 284
<211> 440
<212> DNA
<213> Homo sapiens


<400> 284
gtatcttatt tgcggcgctg atctggagtt cgttcgatga gaatatagaa gcttcagccg      60
gaggcggcgg tggttcgtcc atcgacgctg tcatggttga ttcaggtgcg gtagttgagc     120
agtacaaacg catgcaaagc caggaatcaa gcgcgaagcg ttctgatgaa cagcgcaaga     180
tgaaggaaca gcaggctgct gaagaactgc gtgagaaaca agcggctgaa caggaacgcc     240
tgaagcaact tgagaaagag cggttagcgg ctcaggagca gaaaaagcag gctgaagaag     300
ccgcaaaaca ggccgagtta aagcagaagc aagctgaaga ggcggcagcg aaagcggcgg     360
cagatgctaa agcgaaggcc gaagcagatg ctaaagctgc ggaagaagca gcgaagaaag     420
cggctgcaga cgcaaagaaa                                                 440



<210> 285
<211> 119
<212> DNA
<213> Homo sapiens


<400> 285
gcgatggaaa tcgtccacga gccgcgcgac ctcgagcgtt acatgcgcga ggccgtgaag      60
gtgtcgaacg attcgccggt gctgctcgac cgcttcctga acgacgcgat cgagtgcga      119



<210> 286
<211> 398
<212> DNA
<213> Homo sapiens


<400> 286
aaacagggga tttaagtgtg tcttttgtgt ttgcaaggca ctaacaccac tcccgtctgt      60
atttaaatgc tgtccccagg ttacgactat ggctatgtct gcgtggagtt ttcactcttg     120
gaagatgcca tcggatgcat ggaggccaac caggttgctt tatacttcgg tcaaatgatg     180
ctggaaggat atattttttt atatatgggg agggagggtt tcaaatgatt ttactttgga     240
aaggtacaag aagtctatct gtggagcata ctgtattcca accatcggtt gtgaggaaaa     300
tctttaaaaa ggctggaaag ctttctctag aaaacttaat gggcacagag tgcattttaa     360
aagctagagc ccagttgctt ttggactaga ttccaaaa                            398
```

```
    <210> 287
    <211> 1177
    <212> DNA
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(1177)
    <223> n = a,t,c or g




    <400> 287
cccacgcgtc cgctcctctg ggggtcaaga ggaccccgcc agccagcagt gggcacgacc       60
gcgcttcaca cagccctcca agatgaggcg ccgggtgatc gcacggcccg tgggtagctc      120
cgtgcggctc aagtgcgtgg ccagcgggca ccctcggccc gacatcacgt ggatgaagga      180
cgaccaggcc ttgacgcgcc cagaggccgc tgagcccagg aagaagaagt ggacactgag      240
cctgaagaac ctgcggccgg aggacagcgg caaatacacc tgccgcgtgt cgaaccgcgc      300
gggcgccatc aacgccacct acaaggtgga tgtgatccag cggacccgtt ccaagcccgt      360
gctcacaggc acgcaccccg tgaacacgac ggtggacttc ggggggacca cgtccttcca      420
gtgcaaggtg cgcagcgacg tgaagccggt gatccagtgg ctgaagcgcg tggagtacgg      480
cgccgagggc cgccacaact ccaccatcga tgtgggcggc cagaagtttg tggtgctgcc      540
cacgggtgac gtgtggtcgc ggcccgacgg ctcctacctc aataagctgc tcatcacccg      600
tgcccgccag gacgatgcgg gcatgtacat ctgccttggc gccaacacca tgggctacag      660
cttccgcagc gccttcctca ccgtgctgcc agacccaaaa ccgccagggc cacctgtggc      720
ctcctcgtcc tcggccacta gcctgccgtg gcccgtggtc atcggcatcc cagccggcgc      780
tgtcttcatc ctgggcaccc tgctcctgtg gctttgccag gcccagaaga agccgtgcac      840
ccccgcgcct gcccctcccc tgcctgggca ccgccgccg gggacggccc gcgaccgcag       900
cggagacaag gaccttccct cgttggccgc cctcagcgct ggccctggtg tggggctgtg      960
tgaggagcat gggtctccgg cagcccccca gcacttactg ggcccaggcc cagttgctgg     1020
ccctaagttg taccccaaac tctacacagg acattccaca ccacacacat acacacaccc     1080
cccaccctcc tgccaattaa acagtagcca ttccccnaaa atnnnnnnnn nnnnnnncnn     1140
nnnnnnnnnn nnnnnctcgg cccccgccta ttcaccg                             1177




    <210> 288
    <211> 100
    <212> DNA
    <213> Homo sapiens




    <400> 288
tgaattttca ttttacaggg aagtgtttgt ttatgtcagg gctcagtgag gtccagctga       60
cccatatgga tgatcacact ctaccagggt attgaagctc                           100




    <210> 289
    <211> 406
    <212> DNA
    <213> Homo sapiens
```

<400> 289

```
cggcacgagc ggcacgagag tcagagggtt ttaatttact tgtgaagctc acactattga        60
aactaattgc aatgcttgac tttattttct ttagagtcca agaaagagaa aaacaaggca       120
tagcacaaat ccccctctag agtgtcatgt tggttgggta atggattcca gagaccatgg       180
gccaggaaca tcctctgtca gcacttcaaa tgcttcacct tcagaaggcg caccactagc       240
aggaagttat ggatgtactc ctcattcatt cccaaagttc cagcatcctt ctcatgaact       300
tttgaaggaa aatggcttta cccaacaagt gtaccacaag tatcgtcgaa gatgcctaag       360
tgagagaaaa cgcttgggaa ttggtcagtc ccaagaaatg aatacc                       406
```

<210> 290
<211> 359
<212> DNA
<213> Homo sapiens

<400> 290

```
cccggcagcg gcggcagcgc ggggggccga gacggcagtg cctaccaggg cgcgctgttg        60
cctcgagaac agttcgcggc cccgcttggg cggccggtgg ggacctcgta ctccgccacc       120
tacccggcct acgtgagccc cgacgtggcc cagtcctgga ctgccgggcc cttcgatggc       180
agcgtcctgc acggcctccc aggccgcagg cccaccttcg tgtccgactt cttggaggag       240
ttcccgggtg agggtcgtga gtgtgtcaac tgcggggccc tgtccacacc gctgtggcgc       300
cgagatggca ccggccacta cctgtgcaat gcctgcggcc tctaccacaa gatgaatgg        359
```

<210> 291
<211> 954
<212> DNA
<213> Homo sapiens

<400> 291

```
cccagatcat cgacatggtg cgttgtggtg gtggtacagc tgtggagtct tacctgtcac        60
agtgtcaaga aatgaagggg atgaacggaa ccaggtgctg accctgtatc tgtggatacg       120
gcaggagtgg acagatgcct acctacgatg ggaccccaat gcctatggtg gcctggatgc       180
catccgcatc cccagcagtc ttgtgtggcg gccagacatc gtactctata caagtactg        240
cctatctggg cccctcctct ctcttacccc tctctagact tgcccttagc tgtgggggtg       300
tagtgatccc ctctccctac cacataacct ggttgccacg ctgccctgga agcttttccc       360
caggaccctt ctaagctgcc aagcactcag cccctccatg gcaccccac tttaggctat        420
cccaggccag cccaggctga acgtctcctc ggaacctact gtgtggtcca gggcagatgt       480
ctgaatcaca agggcctctc tagggcacac ttttagctct aagtctctca gggctccccc       540
aagagcctgt ctaagggtct ctttcctcca ggacatagcc ctctggaaca ctgctttatg       600
tctccttgac cagttccgtg tctcccagcc agcacatagc tctgcatatt ttctctgggg       660
cccttctaca agttttgcag atgtccccca agggaagtca ctgtgtgtcc cggagctacc       720
tctgggttct gcagaggcct ttttatacat cctctggcta cgtctgtgtc ccttctggcg       780
ccttcaggca ccaccccttc caggcctcga aaggcagcgg gtctctctag gtgcactcca       840
ccctctgtgt tgctttgttc tgaaaacaag aatcaaatta acgaaaaaaa aacaagcaca       900
agtttattta tttatttgag acacagcctg ggcaagagag tgagacttca tctc            954
```

125

```
        <210> 292
        <211> 595
        <212> DNA
        <213> Homo sapiens




        <400> 292
tacgcactga ctggtgcgtt ggttattgtc accgggatgg tgatgggaaa tatcgccgat        60
tatttcaatc tgcctgtttc cagtatgagt aataccttca ccttcctcaa cgccggcatt       120
ttaatctcta tcttcctcaa cgcctggctg atggaaatcg tcccgttgaa aacgcagtta       180
cgttttggct ttctcctgat ggtgctggcg gttgccggtt tgatgttcag ccacagcctg       240
gcgctgttct cggcggcgat gttcattctc ggggtggtca gcggcatcac catgtcgatt       300
ggtacattcc tggtaacaca aatgtatgaa gggcgtcagc gcggttcccg cctgttattt       360
accgactcct tcttcagtat ggctgggatg attttcccaa tgatcgccgc gtttctactg       420
gcgcgcagca ttgagtggta ctgggtttat gcctgcatcg ggctggtgta tgtcgctatt       480
tttattctga ccttcggctg tgagttcccg gcgctgtgca gccatgcgac taagttgggt       540
accgccagta gttatcccag tctggacgtt gtacagctac ggacattgaa tgcgt           595




        <210> 293
        <211> 552
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(552)
        <223> n = a,t,c or g




        <400> 293
tcttgaagag ccgctgctga tcaacaccag cttaagcaaa gaacagcgtc gggaaaaagc        60
cctgtcgatg atggcgaaag tcggcctgaa aaccgagcac tatgaccgct atccgcatat       120
gttctccggc ggtcagcgtc agcgtatcgc catcgcccgt ggtctgatgc tcgacccgga       180
tgtggtgatt gccgatgaac cggtttccgc gctggatgtt tcagtgcgcg cgcaggtgct       240
gaatctgatg atggatttgc agcaggagtt ggggctgtct tatgtcttta tctcccacga       300
cctgtcggtg gtggagcaca ttgctgatga agtgatggtg atgtacctgg ccgctgcgt       360
ggagaaggga acgaaagacc aaatcttcaa taacccgcgc catccgtaca ctcaggcgct       420
actttccgcg acgccgcgcc tgaacccgga cgatcgccgc gagcgcatca agctcagcgg       480
tgaactacca agcccactga atccaccgcc gggttgcgcc ttcaacgccc gctgttgtcg       540
gcgnttcggc cc                                                          552




        <210> 294
        <211> 426
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 294
tagcgccacc cttgaacggg tactaaatca ccctgacgaa acgcaagccc gacgcttaat        60
gacgctggaa gatatcgtca gtggttattc caatgtgttg atttccctgg cagatagtca       120
gggtaaaacg gtgtatcact cccccggtgc gccggatatc cgcgagttta cgcgtgacgc       180
catacccgat aaagacgctc agggtggcga ggtgtatctc ctttccggcc cgacgatgat       240
gatgccaggc cacggtcacg ggcatatgga acacagcaac tggcggatga ttaacttgcc       300
ggttggcccg ttggtggacg gcaaaccgat ttatacgctc tacatcgcgc tttcgatcga       360
ttttcatctt cattacataa atgatttgat gaataaactt attatgaccg catcggtaat       420
catcat                                                                   426
```

```
        <210> 295
        <211> 340
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 295
gggtgctggc gtatccgggg attaaagtct cgacggcaga agccagggct attttaccgg        60
cgcagtatcg ccgccaggat tgcattgcgc acgggcgaca tctggcaggc ttcattcacg       120
cctgctattc ccgtcagcct gagcttgccg cgaagctgat gaaagatgtt atcgctgaac       180
cctaccgtga acggttactg ccaggcttcc ggcaggcgcg gcaggcggtc gcggaaatcg       240
gcgcggtagc gagcggtatc tccggctccg gcccgacctt gttcgctctg tgtgacaagc       300
cggaaaccgc ccagcgcgtt gccgactggt tgggtaaaat                             340
```

```
        <210> 296
        <211> 281
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 296
cgggcagcag cagcgcgtgg cgctggcccg cgcgctgatc ctcaagccga aagtgctgct        60
gtttgatgag ccgttgagta acctcgacgc caacctgcgt cgcagcatgc gcgacaagat       120
ccgcgagttg caaaagcagt ttgatatcac ctcgctgtac gtcacccacg atcagagcga       180
agcctttgcg gtttctgata ctgtgctggt gatgaacaag gggcacatca tgcagatcgg       240
ctcaccgcag gatctccggg tacggagatt gaattggtaa t                           281
```

```
        <210> 297
        <211> 155
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 297
tggcggtgca ttacctagag cgggtgagaa ttgccgaaca tgcgcataag tttcccggac    60
agatttcagg tggtcagcag caacgcgttg ccattgcgcg ttcgctgtgt atgaagccga   120
aaattatgtt gtttgatgag ccaacgtcgg cgctc                             155




        <210> 298
        <211> 217
        <212> DNA
        <213> Homo sapiens




        <400> 298
gctccctatg acgccgaaaa ttattttgat tatgacaatc tgaataacgg accttctttg    60
cagcactggt ttggcgtcga ttcactgggg cgtgacattt tcagccgtgt cctggttggt   120
gcgcaaatct cgctggcggc gggcgtgttt gccgtgttta tcggtgcggc gatcgggacg   180
ttgctgggct tgctcgctgg atattatgaa ggctggt                           217




        <210> 299
        <211> 568
        <212> DNA
        <213> Homo sapiens




        <400> 299
aggtattctg tctgatcgct gaccttgacc cgatcgatga gcttgtggac ttcccgatcg    60
tttacgcttc tgcgctgaac ggtatcgcgg gtctggacca cgaagatatg gcggaagaca   120
tgaccccgct gtaccaggcg attgttgacc acgttcctgc gccggacgtt gaccttgacg   180
gtccgttcca gatgcagatt tctcagctcg attacaacag ctatgttggc gttatcggca   240
ttggccgcat caagcgcggt aaagtgaagc cgaaccagca ggtcactatc atcgatagcg   300
aaggcaaaac ccgcaacgcg aaagtcggta aagtgctggg ccacctcggt ctggaacgta   360
tcgaaaccga tctggcggaa gctggcgata tcgttgcgat cacgggcctt ggcgaactga   420
acatttctga caccgtttgc gacacgcaaa acgttgaagc gctgccggca ctctccgttg   480
atgagccgac cgtttctatg ttcttctgcg ttaacacctc gccgttctgc ggtaaagaag   540
gtaagttcgt aacgtctcgt cagatcct                                    568




        <210> 300
        <211> 366
        <212> DNA
        <213> Homo sapiens
```

128

<400> 300
caaggcaccc gcgctgaatc tcaaggttcc tccaaagata aaacccgtct tgccttcgct   60
ggcctgaaat tcggtgacta cggctccatc gattacggcc gtaactacgg tgtagcatac   120
gacatcggtg cgtggactga cgtcctgcca gaattcggtg gtgacacttg gactcaaacc   180
gacgtgttca tgactcaacg tgcaactggt gttgcaacct atcgtaacaa cgacttcttt   240
ggtctggttg atggtctgaa ctttgctgct cagtaccaag gcaaaaacga tcgtagcgat   300
ttcgataact acactgaagg taacggccac ggcttcggtt tctctgctac ctatgaatac   360
gaaggg   366

<210> 301
<211> 199
<212> DNA
<213> Homo sapiens

<400> 301
gcgataccta ttccgtttct attccgctgg gagccaccat caatatggcg ggcgcagcaa   60
tcactattac cgtgttgacg ctggctgcgg ttaatacgct gggtattccg gtcgatctgc   120
ccacggcgct gctgttgagc gtggtggctt ctctgtgtgc ctgtggcgca tccggcgtgg   180
cggggggggtc tctgctgct   199

<210> 302
<211> 140
<212> DNA
<213> Homo sapiens

<400> 302
gccaacgcgc agcaagggct gcccagtggt atcaccctga agctaaataa ccttgtcgat   60
aaaggcctgg ttgatcgtct gtatgcggcc tccagctcgg cgttccggt taatctgctg   120
gttcgcggaa cgtgttcgct   140

<210> 303
<211> 441
<212> DNA
<213> Homo sapiens

<400> 303
cgcgcgaatg acgctcatcc ccggcacaca tctgctggaa aacatccaca acatctgggt   60
gaacggggta ggcacgaata gcgcgccgtt ctggcggatg ttgcttaaca gctttgtgat   120

```
ggcgttcagc attacgctcg gcaaaattac cgtctcgatg ctctcggcat ttgccattgt      180
ctggtttcgt tttccgctac gtaacctctt cttctggatg attttttatca ccctgatgct      240
gccggttgaa gtacgtatct tcccgacggt ggaagtcatc gccaacctgc agatgctcga      300
cagctacgcc ggtttaacgc tgccgctgat ggcctcggcg accgctactt tcctgttccg      360
caagttaaat atgtcggggc cggacaaggt ggtgccagcc gcgcggatct ccgggtacgg      420
acctagagtt cgtaagcaag a                                                 441
```


```
        <210> 304
        <211> 402
        <212> DNA
        <213> Homo sapiens
```


```
        <400> 304
ctgtgcgaaa tgtttgcgtg atgcggatga atgcccctcc ggggcgtttg aacggattgg       60
tcgcgatatc agccttgacg ctctggaacg ggaagtgatg aaagatgaca ttttctttcg      120
cacgtccggc ggcggcgtca cgctttctgg cggcgaagtg ttaatgcagg cggagtttgc      180
tacccgtttt ttacagcgac tgcggctgtg gggtgtgtca tgcgccattg aaactgccgg      240
agacgcacca gccagcaagc tattaccgct ggcgaaattg tgcgatgaag tgttgttcga      300
tttaaaaatt atggacgcga ctcaggcgcg ggatgtggtg aagatgaacc tgccacgcgt      360
gctggagaat ctgcgtttgc tggtgagtga gggcgtcaac gt                         402
```


```
        <210> 305
        <211> 346
        <212> DNA
        <213> Homo sapiens
```


```
        <400> 305
tacctgttat tgtttgtctg cttccttgtg atgtctctgc tggttgggct ggtgtacaaa       60
tttaccgccg aacgcgcggg caaacagtcg ctggatgatt tgatgaacag ttcgctgtat      120
ctgatgcgca gcgaattgcg tgagatcccc ccacacgact ggggtaaaac tctgaaagag      180
atggatttaa atctctcttt cgatctgcgt gtcgagccac tgagtaaata ccatcttgat      240
gatatttcca tgcaccgact gcgtggcggc gaaattgtcg ccctggacga tcagtacacg      300
tttttgcagc gtatcccgcg cagccactac gtgctggcag ttggtc                     346
```


```
        <210> 306
        <211> 207
        <212> DNA
        <213> Homo sapiens
```


```
        <400> 306
```

130

```
gttgaattat tcctcagcga tgaaggcgat gatgtggtga ttgaagtcgc cgatcagggc        60
tgcggcgttc cagagtctct acgagacaaa atatttgagc aggggggtcag tacgcgtgct       120
gacgagcccg gtgaacatgg cattgggttg tacttgattg ccagctacgt aacgcgctgc        180
ggtggtgtta tcactctcga agataat                                            207
```

<210> 307
<211> 214
<212> DNA
<213> Homo sapiens

<400> 307
```
tcgacgccat tatcgccccc gatgccaacg ccctgcccgc tgccgcacaa gccgcagaaa        60
acttgaaaaa tgacaaagta gcgattgtcg gattcagtac gccaaatgtg atgcgcccgt       120
atgtagagcg cggcacggtg aaagaatttg gcctgtggga tgtggttcag caaggcaaaa       180
tatcagtgta tgtggcggat gcattacagt aaaa                                   214
```

<210> 308
<211> 129
<212> DNA
<213> Homo sapiens

<400> 308
```
tacatcgtag tgacggggaa aacacattgc ggtacgccac ttactaccgt tacaggagac        60
gcaacgcaat cgggttatct gacgctgaac ctgcctgaaa tgtgggaagt gtcaggttat       120
aaccgtgtt                                                                129
```

<210> 309
<211> 358
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(358)
<223> n = a,t,c or g

<400> 309
```
gccggttttg ccgcatcaat ggtgcttagc gatgactcaa cgtaccagtg cgccgactgc        60
aaatctgccc gccgggccag taaggagtac cccagttcat caagaagctg gcttgccact       120
ttcggcaacg cgaccggatt aagcttcaat gactttgtct ggttatttgt aagtgcgctt       180
```

131

```
aaccgtgcct caataatttt cattttcccc gcgacatcgt tgagctgctg ccgggttttg      240
ctggcattaa tatcgggttc cacaccttca actgaagaag taatcccgtt ctgatatagc      300
tggcgatcgg tcgcgataat ggcgntctgc tcttttttcta tttgctgcaa gaccgtgg      358
```

<210> 310
<211> 253
<212> DNA
<213> Homo sapiens

<400> 310
```
tggcggcctt cctgagagaa tattgccgag gagtacgcga ctaaacgcta tcgttctaac       60
gtcatcaact gggggatgtt accgctgcaa atggcggaag taccaacctt tgaagtgggg      120
gattacattt acatccctgg cattaaagcg gcgctggata atccgggtac gacgtttaaa      180
ggttatgtga tccatgaaga tgcgccggta acggaaatta cgctctatat ggaaagtcag      240
gaagccagaa cag                                                        253
```

<210> 311
<211> 304
<212> DNA
<213> Homo sapiens

<400> 311
```
gctgcaaact gaaattggca gcatggtcta tgcggtgaaa ccaggcgatg gttctgcgcg       60
tgaacaggcg gcgagctgcc agcgtgtgat tggcggtctg gcgaatattg ccgaggagta      120
cgcgactaaa cgctatcgtt ctaacgtcat caactggggg atgttaccgc tgcaaatggc      180
ggaagtacca acctttgaag tggggggatta catttacatc cttggcttta aagcggctaa      240
gtatagtccg ggcacggcgt ttacagtcta tgcgatctcc gggtacggac ctcgaatctg      300
ataa                                                                  304
```

<210> 312
<211> 344
<212> DNA
<213> Homo sapiens

<400> 312
```
actctagagg atctgctgat ggcgttagat ggagagcaac atcttcagca acaggtatcg       60
gaaaaagtat tagccgataa tgtgttaatt gccctggtt ctgttaaacc tgatgcgaca      120
ttctggtcgg ccttaatcca ggatcgctat aacgtgatga cctgtattga aaaagacgcc      180
tgcgtcctgg tcgagcaaga tctgaatagt gatggtcagg cggagcggat cctgtttgct      240
tttaatgatg acagagtcat tgtctatggc tttgactcag acagaaaaga tgggacgcg      300
```

cttgatatga gtttacttcc gaacgaaata acgaaagaaa aatt   344

<210> 313
<211> 630
<212> DNA
<213> Homo sapiens

<400> 313
```
agagtcaaat agcagatgca ggaagatgcc aggtgaaaga tgccgggggtg gcccagctcg    60
gctgtccctg ctgcttgacc tgcccactcg ccctcttccc cacccccgac aggtgattga   120
cttcggatcc gccagcattt tcagcgaggt gcgctacgtg aaggagccat acatccagtc   180
gcgcttctac cgggcccctg agatcctgct ggggctgccc ttctgcgaga aggtggacgt   240
gtggtccctg ggctgcgtca tggatgagct gcacctgggc tggcctctct accccggcaa   300
caacgagtac gaccaggtgc gctacatctg cgaaacccag ggcctgccca agccacacct   360
gttgcacgcc gcctgcaagg cccaccactt cttcaagcgc aacccccacc ctgacgctgc   420
caaccccctgg cagctcaagt cctcggctga ctacctggcc gagacgaagg tgcgcccatt   480
ggagcgccgc aagtatatgc tcaagtcgtt ggaccagatt gagacagtga atggtggcag   540
tgtggccagt cggctaacct tccctgaccg ggaggcgctg gcggagcacg ccgacctcaa   600
gagcatggtg gagctgataa gcgcctgctc                                     630
```


<210> 314
<211> 2285
<212> DNA
<213> Homo sapiens

<400> 314
```
cgccttgtaa agaaacgagt tgagtgtagg cagtgtggga aggccggcag gaaccagtca    60
acgctgaaga cgcacatgcg aagccacacg ggggagaaac cgtacgaatg cgatcactgt   120
ggtaaggcct tcagcatagg ctccaacctg aatgtgcaca ggcggatcca caccgggggag   180
aagccctacg aatgccttgt ctgcggggaa gccttcagcg accactcatc cctcaggagc   240
cacgtgaaaa ctcaccgggg agagaagctc tttgtgtcat ccgtgtggaa aaggctccag   300
tgagcgcgcc tgctttagag acacaggatg attcagaccg gaaacagacc tcgtgggtgt    360
aagaggaagc ctctgtgagc tcgcacctta ctgggtgcaa aagaatccac ggaacttggg   420
agaagtccag ttcctgtaaa aactgggaag acgaggcgtt ctcatcccat aggaggtttg   480
tgagaactca cgccggggggt gaaaatgtac gtctgtagca tggagaagcc ttcagggtac   540
attcagctct taacaaacac aggaggactt aatggcagct tggcatttaa tgtcaaaatc   600
caagccgtgg catttaatgt caaaatgact tcagaccact tctagccttc tgggcccatg   660
agtaataatg agcacactag ggagcatctc tgtaaacaca gtggctgggg aaacccttcc   720
tagtctcact tgattcctca tgacggaaat cacactaaag agagaaatca gtgaagtaag   780
gaacgtggaa ggtcatgaat gggccgcaaa ccacggccag ctgcttgtct ttgtatggct   840
tgccagctaa caatagtggt tccatcttta aggaagaaga atgtttgatg gagaaaattt   900
gtggccaatg aagtctgaaa tacttctgt catctgcccc tttccagaaa aacttggccg   960
acccttggtc tacagcacgg gttctcagtc gggcgacgat ttggctgtgt aggcgtcatt  1020
tggcaatgtc tagagacatt tttggtagtt agaatggggg gaagatactc ctgacttgta  1080
ataagaagac atcagagatg ctgctaagtc ggctccagca cacaggagcc ccccacaacg  1140
aagagttagt gcccccaaac gtcactgttg ctgaggttga aaataatcat gcagtcattc  1200
ctcaattact gcctccagca attcctccat ttttatgaat cttgtgagca cttacgctag  1260
gagaaatttc ttttacaaaa cttttaaaat acagttagtg ctgataattc ctatgtggaa  1320
```

```
atgattccag ccatggtccc ctcacttgag catgtgaata ttctcacgga gagaagcccc   1380
agcgagattt tccggtgaat acgggattgc acttactctt tcatcacgga aacagacccc   1440
cgagagaagc cccaacgaga ttttccggtg aatacgggac tgcacgtact ctatcatcat   1500
gaaaacagag ccccgttcat aaattttca tctttatttt taaggttata ctcctctaaa    1560
taacccttaa gcctcatcaa gaaaggtttg tttatagtat ttttactata gcttcatcct   1620
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ctgcagaaag ctcacagcga ccctggcctc ccctgtggcc tctttgagtg tctgcagcag   2220
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aaaaa                                                              2285
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<210> 315
<211> 1316
<212> DNA
<213> Homo sapiens

<400> 315
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agatggtggg ggctgtctgt cggtggagat ggtggggggct gtctgtcggt gtagatggtg   180
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ctgtcggtgg agaaggtgga agcttgtact cagagcaggg gatatttaga cttgaagggg   300
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gcaacaagag caaaactcca tctcaaaaaa agaaaaaag tgccgagtgg agtcgtcacg    1020
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gcgtgtgcat gcctgtaatc ccacctactc aggaggctga gggaggagaa tcgcttgaaa   1200
ccgggagccg gaggttgcag tgagccgaga tcgtgccatt gcactccagc ctgggcaaca   1260
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```

<210> 316
<211> 2486
<212> DNA
<213> Homo sapiens

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    <400> 316
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ccggggcccc accccaggcc tgagaactcc tcctgggatg gggagaagtt atgagagggg   180
gaaatacggg gatgaatggg gtggctcccc agcggctccc cactttctta ttacgagaga   240
aaaaagcaca aatgagaaag tgggggagag gtgatggaca gctgacagct aagctggagg   300
agggggcgccc aggatggggg aggcggaagc tggtgggtga gtaaaacagg cagcccctcc   360
ccagcagctc tagccttgaa ccccgggccg tggcttgggg ggacttggcc tcttctgttc   420
ccttttgcag ggatgccctc cccactcagc tgagggaagg ctggacgtta aaatctagcg   480
gagaataaaa ttaaggagtt gggggggaaac gctgctggga ggaaagactt gggcttgggg   540
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tccctggata caccagcaag acctggtctg actggagttg agaaactcgt ttaaaacagg   1140
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aaaaagaaaa aagaaaaaag aaaacccatg ggggcacagg catgcccta aaactcagaa   1440
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aactcgagtt tgacgaggaa cggaaagttg acagcttgca ggatgcgctt ttcattcagg   2220
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gtcttgattc gttcaaactg atccaagtgg gctgtgttct gagcgggact ttcccatttt   2400
ttaagaaaat cttctttggc tttggctaag aattctttca cgctctcctg ctcgctgccc   2460
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```

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    <210> 317
    <211> 867
    <212> DNA
    <213> Homo sapiens
```

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    <400> 317
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aactttaata taagcattaa tttgtttgaa atataaagta ttataaaata ttgtaattaa   120
```

```
gcttacagat aattttttaaa atatatacat tatgactaat ataccaaaat tatttatatg    180
tacacattta tatttaatac ccaaagaaaa tttactacca cattgctaca gtagatatta    240
acctgacatg tttattaatt gatcctatag gtataattat aggtcagcat aattttacag    300
tctattcttt tattttacta aattaggaat gccactattc ccggacaaat aaatgcaggt    360
gatgtggcca cccaagaatc atagtagctc ttcagttagc tatcttgcaa tctctgatat    420
aattctacta tgtgaataga gtgaattcca attcttcatc aaaaagtgct ggtggaggtt    480
gtcaggtgtg ttccagtata gattcccaat ccaacggccg gcagatggga gagcagcaga    540
gatggaaatt gtgctcagaa taagccctct ttctcataat acttgtattt ctcatgctga    600
gagtagctgt gcactttggg tgtttagaga agaacttctt tggaagaata ttttctggtc    660
aatttgacca atgttacatg taatctgaat tagtctgtaa gattctttca acctctttttc    720
ttctctcaat acggttttac tcagactgag agctgtcttt ctcttcaatg ctttgggaat    780
tcagtgcttt gtgtctaagc ccctattagt atcacatggt gtctgtgagt gagggggct    840
gtcaccgtga gaactcctgg agctgct                                       867
```

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          <210> 318
          <211> 1683
          <212> DNA
          <213> Homo sapiens
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          <400> 318
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tgaaaaggtg agagagccag ctccctggtg ccaacccaga agcagtggca accacgcact    120
tggtatcacc aagccctggg agaaatgtgt atagaaacac cccacggtgg tgaaacaggg    180
aaaatgggtc atttactgag caagtcccat ttgtgctttc agtatcacat aatcatttaa    240
ctgttagaag tcagcatgtg tggtagctca cagacacagg ataaaggagt gtttcccta    300
ggcagtaaga gaaaccttc aaggaaataa tgtacctggg tatcagagga cctaagacct    360
aagttctagt tctagctctg ctataaacaa gtcttgagat tctggtaaaa gaaaggtctg    420
gataagatga ccctttttaaa gtgctttaca atttaaaaat tcttgatatt cttagtagga    480
tgaagccata ttatcccaca agtgcttgcc tgaatttctt ttttaagggt ccaatttttag    540
tagacattcc attcctcctt agagaagaac attcttcaac cctgcagatg acggagggct    600
aatctgcctt cccctgcttc tctaaccttc tgttccactc cttgccccac agtattttttc    660
tgacctaaga aacagtattg tgaacagcca gccaccggag aagcagcagg ccatgcacct    720
gtgttttgag aacctgatgg aaggcatcga gcgaaatctt cttacgaaaa acagagacag    780
gtgagtataa agcgtcctgc ctagaaatct cagacaattg ctattttttca aatcaacgaa    840
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taacccattg tatctaaaat attgtatcag tgtgtaatca gtatttttaaa attgtgggtt   1020
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ctcagttcat acgttttcat cagaaatact tgatctgtat ttagatttca taaatttaca   1140
gttgacaaag tagattcctg taatacccag attgtttcaa acacacctag ggactttcca   1200
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ccatatgtgg ttaggcagcc gccctattgg gacaggcata gcactgcacc acctgggtct   1440
tgctggcatt aaggaaatga ggatgggctt cattgggctt tactggccct tcacgtgtga   1500
gggcaacttc ctacttctgt cagtgagatt tcttttgtgc tgccatgagc ccaaggtagc   1560
cctcagggcc ccagatttga ccagatctct aagccaactt ttctcttaga gtcttaagac   1620
tgaaattaac tgatctttga aacagaaccc atcaattcat acattctact tcccatgctt   1680
taa                                                                 1683
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          <210> 319
          <211> 1606
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<212> DNA
<213> Homo sapiens

<400> 319

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catagttgtg tctaattctg tatagttcag gcaccctcca caggctgtca atctctgatt     120
tgatctactt ttaccagatt taacagatcc ttgaatttac tttactgtat atacttcctt     180
cttgctcaca ttgggaatca aactaatgct ggaaacatgc atcttcagac ttcattgagg     240
aattccagat tgagacacgc tgggatgtgg attgagtcca tggttagaga agatggatta     300
aatggaaaca aaacaggaaa catgtgcttg gcatctaata gcagttgctg agggtcattc     360
cgctcttgta gttgtgcctg gattgttcgt ataaaggcca ctgttacccg ttcttcaaat     420
tcattcaggg gagtataaag gtttaaaatt ttgacaatct gctgggtgct gagggaggta     480
cacagggagc agatagcctc tgcgtcctcc tgggttttct tctttaattg caggagctgg     540
gctgcttgga tcagaggttc catggtctga actgctccac tctggtgaag gtttcttccc     600
cgaagccact cctcaagctg acttatattg tacctgagtt gcatgcctgt gctccaagag     660
cagacgtcct tccgcaggag caggtcatta agagtcactg cgttgatcat gtagaagagc     720
tgtttgaata cctgcaggat gatctcaggg tccaagccct ggtcacacat gactgtatga     780
aaggcattca tctggcggat gatagcttcc aggcggtatg agttatcctc atctgccatg     840
ctggaggagt gcttctggga gccagtgggc ttcacaccag atagaccctg aatgctctaa     900
ttttccaaca tggcagaaac tatcatcggc tgtaacacac cctcggcaat tttaatgagc     960
tgctggtaga tctgaatgga aaggtcacgt caggcacctg acggtattcg gtgaggtcaa    1020
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ccgctgtact gcttcagaca gtgaagaagg cgggcaggtg ttggataacc agaatgacgt    1140
catctcaaag tcatcattgt gctttttcag gactttctta atgccgttga tggtggaggt    1200
cagcagggag tgcaccttga gatcgtcgtt ggtgtagtcc cgcgtgccgg atgcacatgt    1260
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aatccttctc tttccgctgg accgtgacct gcctgttgag ctcatggcgc ttcctctcac    1440
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gctttttgag cttcctctca ttcttttcca gcttttctac cagttctttа aggtccagat    1560
tctcgttggt cagccgggat atttcctgct gaacgccgct cgtgcc                   1606
```

<210> 320
<211> 676
<212> DNA
<213> Homo sapiens

<400> 320

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ttgatgccca gcaactggcc tgtgacccgc tacttgctgc attatatcca aaaattggtc     180
tttgtgagta gccctgctgg ggctgctatt gcatcaacct ttggggtgtc caacagctgt     240
tcttcgaatt gagactgact ccaaggccac aaactgttca acacacacaa agtggacaaa     300
tagcatttag cagcaggttt ggaacgtaga gaatctgaat ggatctgatg aaacctgaac     360
caggtgctta ttttgttgct ttttttcccat ccactgagca tgacagcatg gattctcttt     420
aaggagaaac catgggcagc tccagccagg cctcatagga aaaggcccgg catgaggttc     480
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tggttccatg tactgtgaac ttgaaaacat gcagactcac gggggttcct gatgcaatgc     600
ttcagatgaa gattgtggac ttgaaaatac agactagaag gccgggcaca gtggctcatg     660
cctgtaatct cagcac                                                     676
```

```
        <210> 321
        <211> 1502
        <212> DNA
        <213> Homo sapiens




        <400> 321
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    tagactttct agcaacttat aaatttctat tataataata aattgatact ttgagccaag     120
    aaaacaatat aaccaaaaat tcatttgttc cctttgttta ggggtgtttt acatttatgc     180
    ataattttgc ttttataaaa gatgattgtt acaatcaggt atacaactac ttggttatgt     240
    ctaagttctg tctcttaaaa tatgttcttt tagagaattc atttaatcat cttattcttt     300
    tcttcaattt tctccaaaca gtggtagaag tactatttga tagacagaat aaagaaaatt     360
    gtttttggcc acacccagat catactgata tctacagcat agtcctggct acaggggagc     420
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    ctgtgaccat tcgctctgaa ttctgacttt cagggcaatc tttctttaaa tgttccacag     660
    agccacaaag tttgcaaccg ccaccatcag catagagtcc tttgggatta tcaggacaag     720
    atctagacag gtgccccatt tctccacaaa caaaacattt tgcaaaagga aattcgccaa     780
    gagccgggtc tactttagcc ttacacttgg ttatttcgtg ctctgtggac ccacacctgt     840
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    gaccaggttt tctacaatgg aaacacacca ttgcattttt ctttgccgct tgtcttttta     960
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    cctcactgtc tgttgctata atttgcccat tgtgaaccat ctgtgaattc tgtcttaggt    1080
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    ttggtaggtt ttggcttgtt ccctcaaagg atcccttctt catgtcctcc catgatgttg    1260
    caggcaaggg tctcttgtta tatgtggtac taactcgggc ccacctggtc ataatttcat    1320
    cagtggtacc ttatcaattt ttaagacaag caggggtggt tagccatcaa caacaaaaac    1380
    aacaaaacta aagagacatg ctatatcact atatgtcaca tatgcccata tgttaaactt    1440
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    at                                                                   1502




        <210> 322
        <211> 989
        <212> DNA
        <213> Homo sapiens




        <400> 322
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    aagctccgcc tcccgggttc atgccattct cctgactcag cctccggagt agcggggact     120
    acaggcgcac gccaccaggc ccggctaatt tttttttttt gtattttag tagaaacggg      180
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    cctcccaaag tgctgggatt acaggcgtga gccactgtgc ctggccaaac gctggtaggt     300
    ttgggagtga gaccacatta catttaaata tatttacaat gttttctgct ctattcttta     360
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    tccctgtcta caatttaaat tgggatcttc tatattctag ttattatttg taaataagaa     480
    aactactgac tttttttctag tatattttct cagaatagga ttttctattt ttctataaaa     540
    tgaccaatgt tatgaagctt cgtaagtttt gtcaaagtga tacacacata cagcaaaaaa     600
```

```
tcaaatagta cagaagtata aaagcaacaa cctctgcctt gccccttctc caccttcagg    660
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tcttgtctaa tttgtttttta attggtgggt acttctagaa caaggttaaa taaaagtggt   960
gttggtgggc gtccttattt ctgatatta                                      989
```

```
    <210> 323
    <211> 1106
    <212> DNA
    <213> Homo sapiens
```

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    <400> 323
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ttatctgtct gttttggggc tggtttattc gtctttgtct tgaaacgccg aaagggagtg   180
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tcttacaaca ctgagactca cgataaaaca gacggccatg tctacaacta tatcccccca    300
cctgtggtac agatgtgcca aaaccccatc tacatggcag gaagggaagg gagacccagt   360
agcctattac cgaaacctgg caaggagttt cagctattag gcaacctgga ggagaaaaaa   420
gaagagccag ccacacctgc ttacacaata agtgccactg agctgctaga aaagcaggcc   480
acaccaagag agcctgagct gctgtatcaa aatattgctg agcgagtcaa ggaacttccc   540
agcgcaggcc tagtccacta taacttttgt accttaccta aaagggcagt ttgccccttc   600
ctatgaatct cgacgccaaa accaagacag aatcaataaa accgttttat atggaactcc   660
caggaaatgc tttgtggggc agtcaaaacc caaccaccct ttactgcaag ctaagccgca   720
atcagaaccg gactacctcg aagttctgga aaaacaaact gcaatcagtc agctgtgaag   780
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aatgtttggg agataggatg aagtcatgat tttgcttttg caagttttcc tttaaattat   960
ttctctctcg ctctcctctt cccactccca cactgaaaaa caaagaagaa aaaagaaaca  1020
aaaccataaa caaaatctat gaagaaatgc attgtagaaa cattcatgtc cactgatggt  1080
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```

```
    <210> 324
    <211> 2366
    <212> DNA
    <213> Homo sapiens
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gacgagtggg aggtgctgct gatctccctg cagggcacag cgccattcct gcatgtgggg   180
gctgtggcag cagtcaccat gctctcctgg atcgtggcag gacagttcgc ccgtgcagag   240
cggacctcct cccaggtgac cattctctgt accttcttca ccgtggtgtt tgccctctac   300
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cctgctctca ttggccaccg cggggccccc atgctggctc cagagcacac gctcatgtcc   420
ttccggaagg ccctcgagca gaagctgtac gggctccagg ctgacattac catcagcctg   480
```

```
gacggcgtgc cccttcctcat gcatgacacc accctgcggc gcaccaccaa cgtggaggag   540
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ctcaacgctg gccagtggtt cctgaagact gacccccttct ggacagccag ctccctgtca   660
ccctccgacc acagagaggc ccagaaccag tccatctgca gcctggcaga gctcctggag   720
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caccaggtca tgtggctgcc tagcaggcag aggcccctgg tgcggaaggt ggctcccggc   900
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tggcccaggg tgggtgtgtg gctaagtggg cctgaacaga gggaaccccta gggcccttgg   2340
ccaatgtgat taaagctgcc atcttg                                         2366
```

```
<210> 325
<211> 1925
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1925)
<223> n = a,t,c or g


<400> 325
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gagcagggaa gcacagccac tgctatagaa attttaggt aagtctggtg ctagcattat   180
tctacaaaac tgtttacacc cattataaat aggggacagt cttattgct cctggagctt   240
gtagctccaa tctgttccag ctccactgaa aaatgatttt tctcaacaat ggtagcaaa   300
gatttccaaa tttacaaaaa gtcattacca atgcatcact ttttgattaa tttctgattg   360
ccatatagat atggactaca gtatgcatgt ccttgacacc aagtacagaa aaaaagctta   420
gaaaagtcgt tttatcaaag ttcagttcaa tgagaaacat gaaaaagtgc aaaatatgta   480
caattcctgg cagttctcac acgggatttt tttgactaca gaccataaaa gtttacattt   540
gtgtaatgaa atgacgatgg atttcacatc actgttaata tacaagtttt tgcttcaaag   600
tgcttacttt atttataaaa gagaagatca agagggttgc aggaattttt tttttttaac   660
aacaaatcaa tggtatgtgt cccaatctcc ttcttcctct tcctttagtg caacatggcg   720
```

```
cagcagcctc atggataagg tctgatttca aaagacattc ctgaaacctc acctacagca    780
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aatgaaaatt atagtcaatt agcccttttc tttcaaagct ttcctctctg acaaagcaaa    960
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tttcaattcc agaatttgag ataaagatgt tcagcaaatt ctccagagtt gggagttgtg   1260
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tctggtgaat atctctttgg gtttcaattt tgtggtcatc tgacagacca tccactttat   1440
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gaatagacga cttgccgctt ctcctcaggc ccatgagcag gattctcggc ttcacttcag   1800
tgctgaaggg gtcactgaag tccagaactc cctcctctgt gccgctgtcc ggatcggcgt   1860
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tccca                                                               1925
```

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        <210> 326
        <211> 1181
        <212> DNA
        <213> Homo sapiens
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        <400> 326
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        caccagaccc tgtcattcca tcactagggg gtaattccag gctcccctg ccagccctga    180
        gacaggagga cggatgtgaa gttgcccagg actagattct gtctctccaa agtggcccaa    240
        gccctgttct ctgtactagg gaagccagct gtgtcttttc gaggacagtt ggtccagcca    300
        gcaggctcag ttcagatacc agacaaccat tccagcacga gggctcagcg ccctggcccc    360
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        tcgtccagct ccggagcttc ctccttgccc ggcccatcct cagggcctgg tttgaggccc    480
        tcagaggctg gtgcccaaag ttcattgtca tacatagagg tgtcaatatc ctcaaacagg    540
        ccctcaagcc catcgtccag tagacagcca gtggctgggc ccagcaggtc caaggcaccc    600
        aggctgggcg ctgctccccc gatgctacgg cctggtggcc cctcgtctgc caagggttgg    660
        ggagcctgac tcaggccctc aatgtggctg aggtcctcca ggaggctggc catggaggct    720
        gaaagggcag cgtccgagct tgccagtaag ttgtcagcca cactggggc tgcaggtggg    780
        ctaggcacag gtggcagggc agccgcgggt gccatggacg cctggatgcg ccgcagagtg    840
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        gctgcgtggc caggatctag ccaccaggag tcgactgcca gaggttcctt ctcctcctcc   1020
        tcctcccgtt tccgcttcag acccttgctc agcatcttgc tcactagcgg ccaatcagaa   1080
        cgaagaggta gccacccaca accaatcagg aaacggcggc ggcagcatcg cttgttggct   1140
        gtcctccgga aacccgcgcc tgggtcgcgc ccacgcgtcc g                       1181
```

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        <210> 327
        <211> 1842
        <212> DNA
```

<213> Homo sapiens

<400> 327
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tagaattttt ggatatgata cctaccaaac gtgatttgga accgtaccgc aactgggtaa     120
aatttctatg gcaaaaggat taaccaaggc atatcatagg aaatccactt tgcccaatat     180
aagcagttct cagcacatac tcaaatgcac acaaacatga aaatcggaaa taaaggaatg     240
ttaaaaaaat aacttaggca gacacaaata aaaccacccc actagtgtat gaatgatgcc     300
acgtttctta tgatcttaat tacatttaag gatttaaaaa atgccactga tctcacagtt     360
tacaatatcc aaatcttcaa acctgctgga agaagtccca cagcacagcc tggaaattcg     420
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tgtaattttt tctctgcaca tcgcacctga ttagaacggt tttctaattc atcttgtaaa     720
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ctttatgcag tgtgttacgc cttgccttta cttcttgtaa tt                       1842
```


<210> 328
<211> 1293
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1293)
<223> n = a,t,c or g

<400> 328
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agagctgggg cagtggggga atctataacc ccagagggta cccccagac ccccaccccc     120
gggagaccag tcctcaccaa cccttggatg ggctcccaag gttgtgcaga agatgctcca     180
gtcaaaagga tagagacatt tgggaaataa aggctgtccc caaagttggg gggaangtcc     240
acggcctggg agtggatagc ctacatggtg gccccagggg gtctgagaga ccagtcccat     300
gtccctgggc gagtccttca gcctgggtgg ccctagagga aagccttcgc gggcggaaac     360
```


142

```
tgttccctgg aggagggcgc ggtactggtc aaaatccttc ctttccacac gggtgacgcc        420
gccttcctta gcatacccac aacttcccgg cacaccagcc ttgataaagc gcttcattcg        480
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```

<210> 329
<211> 1734
<212> DNA
<213> Homo sapiens

<400> 329
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ttctaagggc aatacagcca aaaatggtgg cttgcttctc agtaccaata tgaagtgggt        180
acagttttca aacctacacg ttgatgttcc aaaggatttg accaaacctg tggtaacaat        240
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ggctgtattg gacagttatg aatattttgc tgtgcttgct gctaaagaac ttggtatctc        360
tattaaagta catgaacctc caaggaaaat agagcgattt actcttctcc aatcagtgca        420
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agaacatcta actggaagca cagcagatgt ctacttggaa tatattcagc gaaacttacc        540
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ggctgaggca ggagaatcgc gtgaacccgg gcccggtgga ggctgcagtg agacgagatc       1680
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```

```
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    <211> 2105
    <212> DNA
    <213> Homo sapiens




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acaagtacca gagaggggtg aacaggcata tctgctagct ctcctcttgc agtcctcagc       180
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    <210> 331
    <211> 5654
    <212> DNA
    <213> Homo sapiens




    <400> 331
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145

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<210> 332
<211> 283
<212> DNA
<213> Homo sapiens
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gattcattta gcacacattg gaccacgata ggccctgctg acatgttttt ttcattgtag   180
acagcattat aagaacttta aatctcacgg cacaaacccc tcgaagtctg tctgggcaca   240
tgccacatgc caatcttgtg cctttcccaa ccttcttggt tgg                      283
```

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<210> 333
<211> 1759
<212> DNA
<213> Homo sapiens
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<400> 333
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accttaccca aaaaaaaaa                                                 1759
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<210> 334
<211> 2852
<212> DNA
<213> Homo sapiens
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cgggccgaga atatcatcag caagacacat cagtaccaca agatccaggt gtggccctcc  1140
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147

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<210> 335
<211> 865
<212> DNA
<213> Homo sapiens
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<400> 335
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ctcatcatca tcgtcagtgt gttaatcatc ctgcccctcg ccctcatgaa acacttgggc    180
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ctggccacga catgtggcca tagctctgat cctgcttgtt ttggtcaatg tccttgtcat    780
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<210> 336
<211> 1126
<212> DNA
<213> Homo sapiens

<400> 336
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<210> 337
<211> 4280
<212> DNA
<213> Homo sapiens

<220>
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<222> (1)...(4280)
<223> n = a,t,c or g

<400> 337
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cctctgagga tattcccaat aagattgaag acctgagatc tgagtgcagc tctgattttg   360
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cattcatcat cttcatcccc gagtaaggac tcctcaagag gagagactga agaacgcaaa    960
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tcagatacca gaggtttatc ttcgagaagc accatggcca tctgcacaat cagaaatcag   2160
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tccacccgcc ttngggcttc ccaaagtgcc gggatttaca agcgtggaac cacctgnccc   4260
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<210> 338
<211> 1796

<212> DNA
<213> Homo sapiens

<400> 338

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cctgcgtagc gtgaccctgc gcagcctggg aggcgggtct tagctccagg tgcgtacggc     180
atctgacttg acgtggccca caactgaaag gtctggggag aaggcgccgt gtccgggtgt     240
ggagaggggc gtcgtggaag cgagaagagt ggcccgtccc tctcctcccc ctttccctct     300
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gcggggtcct tggtggggac tgagcgcccc ctcccgggga cgggcggtct ggccgcggag     420
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tgggggaccc tggcttcgga ctccagtatc tgtcgtcgca gggtccctgc cctagtggcc     540
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ggggtccggg ggcgaggagg cgcagggaga agtccccagc gctgggggag aagagcctgc     780
cgaggaggac tccgaggact ggtgcgtgcc ctgcagcgac gaggaggtgg agctgcctgc     840
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cctgattgac cggagacgca ccccaggaag ctcagcccgg agccagaaac gggaggcccg    1140
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tgtgtgtgtt ttctattgaa cacctataga gagagtgtgt gtgttttcta ttgaacatct    1560
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gaattttctg agtctgaaat aaaagatgca gagctatcat ctcttaaaag gaggggctgt    1680
agctgtagct caacagttag gccccacttg aagggagagg cagaattgta ctcacccaga    1740
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```


<210> 339
<211> 1771
<212> DNA
<213> Homo sapiens

<400> 339

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gagcatcctg gcccggttga gcacggagag tgccgatgac tataacttcg tccgggccta     180
cgaatgcttc cagcacaaga accacacgtg cttggtcttc gagatgttgg agcagaacct     240
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tctccagcag gtagccacag ccctgatgaa actcaaaagc ctaggtctta tccacgctga     360
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cagatattac agggcccctg agatcatcct ggtttaccaa ttttgtgagg caattgacat     540
gtggtccctg ggctgtgtta ttgcagaatt gttcctgggt tggcgttat atccaggagc     600
ttctgagtat gatcagattc gtatatttca caaacacagg gtttgcctgc tgaatatttta     660
```

```
ttaagcgccg ggacaaagac aactaggttt ttcaaccgtg acacggactc accatatcct    720
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gcaagaaagt acattttcaa ctgtttagat gatatggccc aggtgaacat gacgacagat    840
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accggtcatg tgacccttcc agcagcacag cccttaaatg tgggtgtggc ccacgtgatg   1680
cggcagcagc caaccagcac cacctcctcc cggaagagta agcagcacct gtattgcggc   1740
cgcgctagag tatccaagat tgcgtctcgc t                                   1771
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<210> 340
<211> 2725
<212> DNA
<213> Homo sapiens

<400> 340

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agaagaaggg gatggagcct ggtgccctga gattccagtg gaacctgatg acctgaagga    180
gtttctgcag attgacttgc acaccctcca ttttatcact ctggtgggga cccaggggcg    240
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cctggtggct gtgaaaatgc tccgagcaga tgccaacaag aatgccagga atgattttct   1800
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cccatgccta tgccactcca tctggacatt taatgaaact gagagacaga ggcttgtttg       2640
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<210> 341
<211> 916
<212> DNA
<213> Homo sapiens

<400> 341
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ggccgagagg gcctcgggga cccagtgcat gccccacgct gagcagcaca ggctgcccca       180
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cgccaggccc agggccacca cagtggaagg tctccccttc cccaggcacg taatcttcca       300
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ctcccgcctc ctccatggtg ccctcctcct ccaggctgcc catgccagaa gcagcccagt        480
ccacactgcc tctggcatcc acgcggaaga caaggggctc tctgacgccg accatggctg        540
tgccctgggc ccaggcctcc tgggccagca gcttgttgtt ggagttgttg gaattggggt        600
cccctccggg ggtcgcaccg ggcagtgtga agagatgccc cgatgagctc ctgggcacct        660
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ccacctccac ccacttgggc tggggccccg agagtccggg cagagctgga gagtgggcct        780
cggcctccgt cacatacagt gtgggcacca cgggcttctg cctggttct gcctccggcc         840
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<210> 342
<211> 860
<212> DNA
<213> Homo sapiens

<400> 342
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aaacttgggc cccccaagg atcctttaaa cgggccgccc cttttttttt tttcaatttt       120
```

<center>153</center>

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cttcaacagg tcatgttcaa tttcttcaaa gttttaacat aaaaataatg agagccagga    180
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caccctcctc tgcctcagat tcccaagtgg gcaggtgggg gtgaatgggg ctccgggtag    300
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ctccaggaag tagtagatat ggcccaccgc aatccccagc aggtccacga ggatggagtt    660
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      <210> 343
      <211> 3658
      <212> DNA
      <213> Homo sapiens

      <220>
      <221> misc_feature
      <222> (1)...(3658)
      <223> n = a,t,c or g
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gcaaaccgga cagaccgggg cagggcaagg cccttgaaac caagtcctcc ttgagcacct    180
ttcccaggtt agaaacccct cttcagcctg tgcttcgcac gtttccttca gcgtgccgcc    240
cattcagact gcgccaactt acgtccccag tgcccacgcc tgngtggatc aagtgtccaa    300
cgggaaagta tgagttaggg caagcgcttt tttttaagc tgtaaacgct tcacatgact    360
gggccccgta aggaaattgt ggggagctta ggatgagcct gggagctttt tcagggactt    420
ggatgaggac tctgtacaca aatgtgtact ggcagagagt ctgcaccagc atcattctct    480
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```

```
ccttctcgct gtgtcctctc ggtgaaaacg ctggggctgg gagcccaccg agacggctcg    1920
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cagctaagcc tgctaggtga attggctgtt ccaaggtaca agggatacct tcttcccaga    3540
tatccttcct cagttgcaga taatactggt acccggtaat cctctgctgg aagcgaggaa    3600
cctgaggcgc ttaaaccccc attccaaaat agacggtagg ttccaaggcg tttttttc     3658
```

```
<210> 344
<211> 419
<212> DNA
<213> Homo sapiens
```

```
<400> 344
aataaagaaa gaaacagaag ctggccgagg agtgagttga gctttccaag ttagctgacc     60
ttaaagatgc tgaagctgtc cagaaattct tcctggaaga gatatagctt tggtgaagag    120
atcctagcta aaggtgtaga ccacctgaca aatccaagtg ctgtgtgtgg acagccacag    180
tggttactgc aagtgttaca acaaactctt ccactaccag tgatccagat gcttctgaca    240
aagcccctac cagttaatca gagacttgta agtgctggcg cttggccaaa gacgatgtgg    300
aatgagaaac aaatgtcaac ataataaaat ctcagttaaa atacttgaaa aattcttaac    360
ttggtagttg agcagaaggg caaatatgct tgttatgaac tattctacat tgaaatcta    419
```

```
<210> 345
<211> 1253
<212> DNA
<213> Homo sapiens
```

155

```
        <400> 345
gaattcctc tgtcccgcca tacacagggt gggacggggc agggcgggca ttgagctttg      60
tgtcctgggg tcagggtgct tcccctgccg gcctcacccc accaagcgga tctcatggtg     120
ctcctctggc tgggcccacc cgcagtggta tccttctggg ggcccttatg ggagcctgcc     180
gggggtgcag atcctgccgg gggtgcagag cctgctgggg gtgcagatga tttctgggtc     240
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cctttccctc ccacaccacc ccaggaccaa tgggctggct ggaggccacc catgctaaaa     360
taggctcaag ggcctacttt agcttctggg caaaggtctt ggcctgggcc tgactctgtg     420
gccttcctga gctgcctccc cagtaggcct cagtgctggg ctacaggcct cctccattcc     480
ctccattcat gtgaccccac ccctcccagc agaaactctc ttccgtagcc caggagcagc     540
tgttgagggt ttcacctgcc catgccccag cctaaggccg gcttccccag agcagacggg     600
ttgcactctc ctgcccctca ggcccactct gtcatccaac aagctcactg caactggccc     660
atcttaaaaa caacaccggc tggtcacgct ggctcacacc tgtaatccca cgcgctgtggg    720
aggccggggc ggggggatca cttaaagtca ggagtttaag accagcctgg gcaacatggt     780
gaaacccgag ctccactaaa aacacaaaaa caaattaagg caccctgagt ggtggtgggt     840
gcctgtggtc ccagcgactc gggaggctga ggcagaattg cttgagccca ggaggtggag     900
gctgcagtga gccacgatcg catcacgcac tccagcccgg gcaacctggc aagaccctga     960
ctctaaaaag aaaaaaacaa caaaaaaaaa aagcccacgt tcaagggcag cactattcaa    1020
aagagggaag caactcagga atccaaacgc gcaggaggga acacatcggg gttcatccac    1080
aggggaacac gattcaccca aaaaaaggaa ggaaaccggc ccggccccgg gacttgaatg    1140
cacctggagg agactgtgat gaacaaaagc acccaaaccc aaaagggcag ggacggggtg    1200
atctgactga ggtgaggacc ccagccagcc aaattcatgg agacagaaag aag           1253



        <210> 346
        <211> 807
        <212> DNA
        <213> Homo sapiens




        <400> 346
tttcgtcgga ggcgggcgcg ggcgcgtccc tgtggccagt cacccggagg agttggtcgc      60
acaattatga aagactcggc ttctgctgct agcgccggag ctgagttagt tctgagaagg     120
tttccctggg cgttccttgt ccggcggcct ctgctgccgc ctccggagac gcttcccgat     180
agatggctac aggccgcgga ggaggaggag gtggagttgc tgcccttccg gagtccgccc     240
cgtgaggaga atgtcccaga aatcctggat agaaagcact ttgaccaaga gggaatgtgt     300
atatattata ccaagttcca aggaccctca cagatgcctt ccaggatgtc aaatttgtca     360
gcaactcgtc agacggggtt tcactgtgtt agccaggatg gtctcgatct cctgacctcg     420
tgatccaccc gcctcggctt cccaaagtgc tgggattaca ggcgtgagcc accacgcccg     480
gccaatattt tgtaattttt agtagagatg gggtttcact atgttggcca ggctagtctt     540
aaactcctgt cctcgtgatc ctcccacctc ggcctcccaa agtgctgaga ttacaggtgt     600
gagccactgc atccagccaa taatatgctc tttaacaaac aatggatcaa aggagaaatc     660
acaagggaaa tagaaaaata cttaaaaatg aatgaacatg aaagaaaaca taccaaacgt     720
atgggaaaca gtgaaaacag tgcaaacgag gcaatttata gctatacacc attaaattta     780
aagataagaa agacgtcaaa ccaacaa                                         807



        <210> 347
        <211> 918
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 347
tttttttttt ttagaatata tttcatttta ttataaagca gtgctcccaa acttttcaca        60
gcgtacacct cgagggtgga gaactaacat ccaagcacac ctggatggtg gatgggaccc       120
acttctgggt aacctgatga ggaagctcta gtgaagaaat tcaggacgcg gtcttcagag       180
cagagggctt ggttcaagtc cctgttctgc cacttactaa ctgcatgacc ttgagcaagc       240
cacttaattt ctctgctcct tctctgtgaa atgggtacaa tgtggtcagc agtaaaggaa       300
ctaatacatg tacagcactc agcacaaagc ctggcacaca gcaggctctc accaggtgcc       360
attctcagca caactgcttg gttgagctac tgtggcagtg gcaggttgtg ccccaagggg       420
gtgggctcag gagcccgtgc agcaagaggc agtgaccaag gaggcagggg acaatagccc       480
tatctttтса ggatctctgc cttggacctg gagaatggag agactttgct cctatcacgt       540
cccaagttgg gaaaactaag gacgaagccg gtgactgaca tctgaaatgg aatcctctgc       600
atctccaagt ggccctatac ctgacaatat cattactagt gaaaaccaag tgacaaacac       660
actcctcgac cccaagttct tccacatgtc ccattgagga gagcacagcc aataacgcag       720
agtgtattta tgcgcagggc tggctaaaca ggctggctac gagtccggaa cagtgtcagg       780
atctggcttc ccattggccg acatgacaga atccttctcg cgttgctctc tgatgtactg       840
gtccaacagg gtggtcagct ggaggggctg gtgctggagc agggagtggg tctgggctgt       900
gaggcaggtg gagttctg                                                     918
```

```
        <210> 348
        <211> 1893
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 348
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cttcttcagc accacctttt tggggaagat ttacctagct gccaggaaga agaagaattt       120
tcagttcttg ccagctgcct gggacttctg ccaacgtttt accaaacaga acatccattc       180
atcagtgcct cctgtctgga ttggccagtt ccagcatttg atattataac tcattggtgt       240
tttgagataa aatcatttac tgaaagacat gcagaacaag gaaaggcctt gcttatccaa       300
gagtcaaaat ggaaattacc acacctacta cagttgcctg agaattataa caccattttt       360
cagtactacc acagaaaaac ctgtagtgtc tgcaccaagg ttcctaaaga tcctgctgtt       420
tgccttgtgt gtggtacttt tgtatgcctg aaaggacttt gctgcaagca caaagttac        480
tgtgaatgtg tactgcactc tcagaactgt ggtgcaggaa caggtatttt ccttttgatc       540
aatgcatcgg taattatcat cattcgaggt caccgcttct gcctctgggg ttccgtgtat       600
ttggatgctc atggagagga agaccgggat cttaggcgag gcaaacctct ctacatttgt       660
aaggaaagat acaaagttct tgagcaacag tggatttctc atacttttga tcacatcaat       720
aaaagatggg gtccacatta caatgggctg tgactctcca cctcagcatt gcatcgtatc       780
atcattttcg ctacgaattt attttttcaac aataagcttt aacttaattt gggggattaa       840
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agttaaatta ttctttagtg gtcatttttt aagtgcacaa ttaataagaa gcacaacttg      1020
ttcacaaact cattcagaaa tgattctccc aacaatgcat atcagctatt cattgatact      1080
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aagttggtct aatagtagaa ctttaaaatt ttttcttatt gtgaggaatc tgttaaaagt      1320
ttaaagcttt gctgaaaact gaattcattc tcaggaattt cataaatctt ctccccaggt      1380
aaataattga aatagctgta aaataagtag atagctgctg ttaatataat acagtacatt      1440
ttgggggggca tatgtgtggt tggggggtcc ttaaaaatca aaatttgcca tttcagttgg      1500
atgaattact agaggtaata acaaatctta ctataaaatc aagaggttta agaacataca      1560
ctgggcagat gttgattccg tgcatgccca ccttttatta ccaaacaagg ttttgtttat      1620
atgattgtat tagaaatgct cagacttccc cagaaatgaa ccataaattt tggaacttcc      1680
tttcagctca agaggttcag ctatattgta tttgtgcagt ggtaatcact acctatttct      1740
```

```
ggctcgggtt tccctaaaag gaaaaaaaag gcggcagtgg gtgatgaccc tcatggaatg    1800
agccacgctt cctgcattcc tccttaggaa ctggctgtgg aaaaccaatt tatggtttgc    1860
aggggtttaa aaatccagta aaaatggggg atg                                 1893
```

```
<210> 349
<211> 1433
<212> DNA
<213> Homo sapiens
```

```
<400> 349
gcaagggggca gttggtgaac ttgctgcctc cagagaattt tccctggtgt ggaggcagcc    60
agggaccccag gatgctccgg acctgttacg tgctctgttc ccaagctggt ccccgctcca    120
ggggctggca gtccctgagc tttgatggcg gggccttcca ccttaagggc acaggagagc    180
tgacacgggc cttgctggtt ctccggctgt gtgcctggcc cccactcgtc actcacgggc    240
tgttgctcca ggcctggtct cggcgactcc tgggctcccg gctctcaggc gcatttctcc    300
gagcatccgt ctatgggcag tttgtggctg gtgagacagc agaggaggtg aagggctgcg    360
tgcagcagct gcggaccctc agcctccgac cactgctggc agtgcccact gaggaggagc    420
cggactctgc tgccaagagt ggtgaggcgt ggtatgaggg gaacctcggt gctatgctgc    480
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ctatgtagtg tataagtcca ttccctatgg ctccttggag gaggtaatcc cctacctgat    1260
ccggagggcc caggagaacc ggagcgtgct tcagggtgcc cgcagggaac aggagctgct    1320
cagccaaaaa ctgtggcggc ggctgctgcc aggatgccga aggataccccc actagcaccc    1380
ctgaggggggt catgtggtca ataaaagtcc ttaggtgctg cctaaaaaaa aaa           1433
```

```
<210> 350
<211> 1062
<212> DNA
<213> Homo sapiens
```

```
<220>
<221> misc_feature
<222> (1)...(1062)
<223> n = a,t,c or g
```

```
<400> 350
tttttttttt ttccagtcat taatgatctg tccttttgag atcttttact tcagaggaag    60
atttaggcaa gagagcaaca tataatagtc agtgatacaa agaagggcat ggaacatttg    120
```

```
gggaacacag gggtttggag ggcctgaagc acaggggtgg tggtattaga aatgtgggaa    180
atatgggcca tgagcctccg gacagaatgg ggtccaggaa ggacagcatc acacactggt    240
gctggaattt ggggatcctt ctgtgggcaa cctcagcagt ctggttattg gccctttttt    300
cttacagcct ggaaaactgg accaagtttc tattgatctc agcgaccgac cggcagcctg    360
taaggggcca tggaagtgtg gaactcattt gttaaaatgt tcaaaacttc cttaacacca    420
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tcatcaagct gcctcccacc atggttggaa acaatgatac cctggacatt gtgcttcaca    660
gctaactctg catcctcttt tgtcaaaatc cctttcagga tgatgggcaa tcgagttatg    720
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aactggtttc gaatgtcatg tcgcctgttg ccacatacag gtgtatccaa agttattacc    900
aaagctttga aacctaggga ttctaccctc tggatcaact gtttgttcag ctgcaggtct    960
ggatgcacat agagttggaa ccatcggagg ccttcgggag ctcttgctgt gctcatttcc   1020
ccgaattcca ccacnctgga ctagtgttct caaaannntc ga                      1062
```

<210> 351
<211> 1227
<212> DNA
<213> Homo sapiens

<400> 351
```
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actctgcggc ccgaacttca cgcaaagctc tggcaccagg actgatggcc agaggctggg    180
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gcatggggggg agagaggtgc ttggggtggg gtagaggtgc gtgggagatg ctcggtccga    300
gtgcacacac atgcatggga acatgtgcag gagtatgtgc gtgtgtgtat gcgtgacagc    360
atgtgtgagc gtgagtgtgc atgtgtgaac gtgtgcgtga gcatgtgcaa gtgggcgtgc    420
atttgtgtgt gtgtacgtgt gagcgcatct gcgtgcctgt gcacgagcgg gaggggtggc    480
tggcctgggt gtgcagggag ctgggtgtga ggaccgtgct gtccactgct gggtctcgcc    540
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cacagccgac ctgtccccag gcccccactg cagggcagcc ctccagagcc aggtgagcag    660
cagacacctt gcctggccca aggctccgca ggggtggatc catgccctgg tcaccacgg    720
cccaggcact cccttttgcca tctgcggccc caggaggttt acctataaaa aaaacaaaca    780
aacaaacaaa caaaacagga cgaggtcgcc cagaggccaa gcctccccgg ccgggacccc    840
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agacagaaca aaccaaatca gagagaactg caaggggggcc gggcgcggag ctcacgcct    960
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tggtaggcac ctgtaatccc cagctactca ggagcctaag gcaggacgat cacttgaacc   1140
cgggaggcgg aggttgcagt gacccgagat tgagccactg cactccagcc tgggcagcaa   1200
gagtgaaact ccatctcaaa aaaaaaa                                        1227
```

<210> 352
<211> 1194
<212> DNA
<213> Homo sapiens

<400> 352

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ggtttcaata ggtttcaagc agaagggaca ctgcctacca cttgcggtcc catttctgat     120
gaagggtgat tatcatgtgg caaactcaca tttgcatgac tggcaaagta aaaagataga     180
taactttttg tcaacatatc tttaagagtt tatatcacgc acagtttaaa atcatgacga     240
gatgctgatg gttggactat attcatgtct cgtatgttgc accatatttt ggttcacagt     300
ttatccatga tttagcatgc caagagaaca tctcagtcag taagagaaca tctcagtcag     360
tgtcaccttg agaagagcat caaaaagcaga gggagcagaa ggaggaccgt ctgggcttgg     420
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ccatattttg taaagcaaat tttggagact attttactac taatgttacc ttctttctcc    1020
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catgcggctc atacaactca ccttggaaag actgaagtgc tgtatgtaca aaacacaaga    1140
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<210> 353
<211> 1140
<212> DNA
<213> Homo sapiens

<400> 353

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ctttgggagc agcgagggga atgtgtctct cacccctagg cctcctggtc tggctcctgc     180
tcaggccaca cggcgcaccc accccagcg cgcctcagtc caggtcactg ggcagggtgt      240
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cgcgttgaga acgaccacgt ctgcctccgt cccgatgtcc tcgccaaacc agacagcctt     960
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gccagctcgg gccgctgcgg ggggctcaag ggcaccgcct ggggaggcag ggccgggggg    1080
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<210> 354
<211> 2401

<212> DNA
<213> Homo sapiens

<400> 354
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atgttgctga tggagctaag gctgcaattc tgggtttttac atcaccggtc tgggcagtgc   180
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caaaggatga acattccaaa acaaatagaa tgacagggag agagtttttc tctcgtttcc   300
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a                                                                   2401
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<210> 355
<211> 2186
<212> DNA
<213> Homo sapiens

<400> 355

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agtagggcct tcgcgcacct catggaatcc cttctgcagc acctggatcg cttttccgag     180
cttctggcgg tctcaagcac tacctacgtc agcacctggg accccgccac cgtgcgccgg     240
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<210> 356
<211> 1142
<212> DNA
<213> Homo sapiens

<400> 356
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aagagaaatc gtatgaatgt aatgagtatg agggcagttt cagtcatagc tcagatctta     180
tcctgcaaca agaagtcctc accagacaga aagcctttga ttgtgatgta tgggaaaaga     240
actccagtca gagagcacat ctagttcaac atcagagcat tcataccaaa gagaactcat     300
gaatgtaatg aagatgggaa gatatttatc aaattcaggc ttcattcagc atctgagagt     360
tcacaccagg gagaaatcat gtatgtactg catgtggtaa agccttcagt catagctcag     420
ccattgctca gcatcagata attcacacca gagagaaacc ctctgaatgt gacgaatgaa     480
gaaaaggtat tagtgttaaa ctcttaatcg actcctgcaa atctatacca gtgagaaatc     540
ttacaaatgt attgaatgtg caaatttttt catgctatta gtattttcat accttagtca     600
catttggaga attcacatgg gaataaaaat ccattgctgc aatgaatgtg aaaaagccat     660
cagtcaaaga aactaccttg tttagtatca aattcacgcc atgcaaaaag attataaatg     720
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taataagcat gtatgtgtgt gaggagattc agtcataacc caacgctcat tcaacatcaa      780
agaatttata cctaagagaa cttatttggg tgtagtaaat ggcagatctt tcaataggag      840
tttaactagt ctttgtcata tcagaatatc catagtagac aagaatttga tgtaacgcaa      900
atggaaaaac tcgacaccac atttcaggct ttacccaaca tcgaaataat ggagagaaaa      960
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<210> 357
<211> 3167
<212> DNA
<213> Homo sapiens

<220>
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<222> (1)...(3167)
<223> n = a,t,c or g

<400> 357

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gcactccctc cttccagtaa ttcctggaag gagggagtgc accaatcgac actctgtatc     2160
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<210> 358
<211> 4747
<212> DNA
<213> Homo sapiens

<400> 358
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taaaatatat taaaatgatt taataaaggt cttttattat tttacacatc aaatttcatg  180
caatcagtac tccactgaag gagaaaagga ttatgaaaaa acaatgaaag cacagggtag  240
gaaaataaac aacacaaaag actaattctg gatttttttt ctgtgtcctt aataccctgt  300
gctgtctttg acaacaaaga tgccttactt atgtgattca gaggcccgga agtgaaaaaa  360
atacaagtag ttaatgaata atgcatatgt tcatagcaat ggtcaaatta tactgtttcc  420
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cacaaataca gttttactct tcacaataag cattaagaca tgtccttgga gctctgtgac  540
ttcatcatat actacaattt cattgtaagt ggggtccgta cattttggaa cagattttgt  600
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cgcagagcca tctgggagat gaatgttttt catgtgtttc actagtatgg tcagcttcac  720
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aatggcgatg aatctttgct agggtcacag catcaggtac catctgcacc aatcgttggt  1860
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cagccttaaa aataatgctg atgttttgc ccatcagatt agcattgatg aaagtaatct    2040
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<210> 363
<211> 3569
<212> DNA
<213> Homo sapiens
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aacatttggg gaactgtcgc tgtgatgctg cctgtgttga gcttgggaaa ctgctgttta    420
ggattaccag gggggacgtg cataggaacc aggaacatat atgggacttg caacaaattc    480
aggtgtgggt gagaaaaggt tgaccagaag cctctgtgcc tgttcagatg actgcaagga    540
ccagggggcga ctgcctgcca tccaacctac agttcctgtg tgtccaaggt gaagaaaagt    600
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169

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ttgaaacgcc ctccctaccc ctccttattt tcctttggat ggattcaggg cagaatattt   720
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<210> 364
<211> 832
<212> DNA
<213> Homo sapiens

<400> 364

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ttcggggtgc tctttggagg gcgtgtttgt tgaaaaacca cccccaaccc cctgcccgcc      180
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tccgctcccc tgatgggggt gccaggctgt gactggaggg ggaggcaggg ggcacccgtg      300
gggtgcctga gctgttttct ttcccatttg gcaacagtga cgggcgctca gcccccgggc      360
gttctgtgca aacgtaggtg ttcctgcggg tcatcatgct aggagggagg ttgttggggg      420
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tgaccatggg gctgaagggg gggcagccct cgactccac tccccgcggt gctgcagctc      540
gccttccggc ctggcagccg ctcctccttc agctccgcct cccccgtgct cgtcgggctg      600
cgtttggggt gcaggggtgc aggggatggg ccacctgggg gaggggtac cgtttagagc      660
tggcatcacc acggaaaccc agaactgact ctgggggatc gttggaacct gagaattcct      720
cacgtgggtt gcaatctctg tgtgggccat tctgacaata tctgtcaaaa ttacctcaag      780
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        <210> 365
        <211> 1321
        <212> DNA
        <213> Homo sapiens
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        <400> 365
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        aacttcctcg ggggccggct gatgatccct aatacaggaa tcagcctcct catcccccca     180
        gatgccatac cccgagggaa gatctatgag atctacctca cgctgcacaa gccggaagac     240
        gtgaggttgc ccctagctgg ctgtcagacc ctgctgagtc ccatcgttag ctgtggaccc  ·  300
        cctgggcgtc ctgcttaccc ggccagtcat cctggggtat ggaccactgt ggggggagccc     360
        agccctgaca gctgggagcc tgcgcctcaa aaagcagtcg tgcgagggca gctgggagga     420
        tgtgctgcac ctgggcgagg aggcgccctc ccacctctac tactgccagc tggaggccag     480
        tgcctgctac gtcttcaccg agcagctgag ccgctatgcc ctggtgggag aggccctcag     540
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        cgagtacaac atactggtct actgcctgca tgacactcac gatgcactca acgtagtggt     660
        gcagctggag aagcagctgc agggacagct gatccaggag ccactggtac tgcacttcaa     720
        ggacagttac cacaacctgc gcctatccat ccacgatgtg cccagctccc tgtggaagag     780
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.       gactgggcca gcaggacggt ggcttctttc acagtgttcg gaggctgagt gctgaggccg    1320
        g                                                                  1321
```


```
        <210> 366
        <211> 777
        <212> DNA
        <213> Homo sapiens
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gagcagctgg gtcagctcta cggctgcgag gaagaagaaa tgccagaggt agaaattgac     180
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aaatgttaat tcccttatga tcccggaaaa atagtttttt tacaagaagt tgggcaaaat     720
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```

```
        <210> 367
        <211> 2056
        <212> DNA
        <213> Homo sapiens
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gttgataaag aacttaacta tagaagatcc agtggaggcg ctccatttgg gaacattaat     240
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gttcattttc atgcaagcag aagcacaagc aaaagtggac aagaagagag acaagattga     540
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caaaaactgg aagaactgta aagaaaaaa gtatatatca ataagtatac atgtggcttc    1800
acatttatta aacaataaat tccgcacaga aagtttcatt tcaccaatgt gtcacagtca    1860
gaaacaaact catgtcttcg gtctgttgtc tgtacattct ccgttaatgt ttctcgcatt    1920
tattttttata ccatatttaa agaagaaaca ccttttactc caaatgtatt aaagttgatc    1980
```

172

```
ccttctctgt aaatttgtgt atgtttatat tgttgtttta tctttcatta aaagatgtca     2040
gaatctcaaa aaaaaa                                                     2056
```

<210> 368
<211> 460
<212> DNA
<213> Homo sapiens

<400> 368
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gacggagagg tactgacgac aaatcagatc tatgtgacca gacatgagaa ggctgcctat     180
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```

<210> 369
<211> 2355
<212> DNA
<213> Homo sapiens

<400> 369
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ggcggagagc cggcgggcgg tctcggcctg tcaggagatc caggcaattt ttacccagaa     180
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173
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```
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tcccaagctg tgcgttctgg accagctact gaattattaa tctcacttag cgaaagtgac  2040
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gaaaaaaaaa aaaaa                                                    2355
```

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<210> 370
<211> 1333
<212> DNA
<213> Homo sapiens
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tcctggagcc ccgggccagg ttctacgctg ctgaggtggc cagcgccatt ggctacctgc  600
actccctcaa catcatttac agggatctga aaccagagaa cattctcttg gactgccagg  660
gacacgtggt gctgacggat tttggcctct gcaaggaagg tgtagagcct gaagacacca  720
catccacatt ctgtggtacc cctgagtact tggcacctga agtgcttctg gaaagagcct  780
tatgatcgag cagtggactg gtggtgcttg ggggcagtcc tctacgagat gctccatggc  840
ctgccgccct tctacagcca agatgtatcc cagatgtatg agaacattct gcaccagccg  900
ctacagatcc ccggaggccg gacagtggcc gcctgtgacc tcctgcaaag ccttctccac  960
aaggaccaga ggcagcggct gggctccaaa gcagactttc ttgagattaa gaaccatgta 1020
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ccaaatgtga caggacctgc tgacttgaag cattttgacc cagagttcac ccaggaagct 1140
gtgtccaagt ccattggctg tacccctgac actgtggcca gcagctctgg ggcctcaagt 1200
gcattcctgg gattttctta tgcgccagag gatgatgaca tcttggattg ctagaagaga 1260
aggacctgtg aaactactga ggccagctgg tattagtaag gaattacctt cagctgctag 1320
gaagagctgt att                                                      1333
```

```
<210> 371
<211> 2457
<212> DNA
<213> Homo sapiens
```

```
       <400> 371
agcggccgca gaccctgaag ggacaccagg agaagattcg gcagcggcag tccatcctgc    60
ctcctcccca gggcccggcg cccatcccct tccagcaccg cggcgggat tccccggagg   120
ccaagaatcg cgtgggcccg caggtgccac tcagcgagcc aggtttccgc cgtcgggagt   180
cgcaggagga gccgcgggcc gtgctggctc agaagataga gaaggagacg caaatcctca   240
actgcgccct ggacgacatc gagtggtttg tggcccggct gcagaaggca gccgaggctt   300
tcaagcagct gaaccagcgg aaaaagggga agaagaaggg caagaaggcg ccagcagagg   360
gcgtcctcac actgcgggca cggcccccccc tctgagggcg agttcatcga ctgcttccag   420
aaaatcaagc tggcgattaa cttgctggca aagctgcaga agcacatcca gaaccccagc   480
gccgcggagc tcgtgcactt cctcttcggg cctctggacc tgatcgtcaa cacctgcagt   540
ggcccagaca tcgcacgctc cgtctcctgc ccactgctct cccgagatgc cgtggacttc   600
ctgcgcggcc acctggtccc taaggagatg tcgctgtggg agtcactggg agagagctgg   660
atgcggcccc gttccgagtg gccgcgggag ccacaggtgc ccctctacgt gcccaagttc   720
cacagcggct gggagcctcc tgtggatgtg ctgcaggagg cccccctggga ggtggagggg   780
ctggcgtctg cccccatcga ggaggtgagt ccagtgagcc gacagtccat aagaaactcc   840
cagaagcaca gccccacttc agagcccacc cccccggggg atgccctacc accagtcagc   900
tccccacata ctcacagggg ctaccagcca acaccagcca tggccaagta cgtcaagatc   960
ctgtatgact tcacagcccg aaatgccaac gagctatcgg tgctcaagga tgaggtccta  1020
gaggtgctgg aggacggccg gcagtggtgg aagctgcgca gccgcagcgg ccaggcgggg  1080
tacgtgccct gcaacatcct aggcgaggcg cgaccggagg acgccggcgc cccgttcgag  1140
caggccggtc agaagtactg gggccccgcc agcccgaccc acaagctacc cccaagcttc  1200
ccggggaaca agacgagct catgcagcac atggacgagg tcaacgacga gctcatccgg  1260
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aaggccttca gcccgcggat cgtggagaac ctgggcatcc tgaccgggcc gcagctcttc  1440
tccctcaaca aggaggagct gaagaaagtg tgcggcgagg agggcgtccg cgtgtacagc  1500
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ccttgggctg gggctgcgg aggggaagcc cacccacaat gcatggagta ttatttttat  1680
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caccaagact aatctcagcc aaacctgctg cttggtggtg ccagcccctt gtccaccttc  1860
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tggggggtcc tggcccctgt gatgctcccc catccccacc cacttctaca tccatccaca  1980
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cggcttcaga cactcccagc gcccactctt acaggcccag gactggagct ttctctggcc  2220
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acttgagtct caccctacag atgagaggtg gctgaggcac cagggctaag caattaaacc  2340
agttaagtct caaaaaaaaa aaaaggggg ggccgtttta agaacccttt ggggggcccc  2400
aagttaacgc gggctggcaa ggtaaaagtt ttttccttat agggagccgt ataaaac     2457
```

```
       <210> 372
       <211> 1333
       <212> DNA
       <213> Homo sapiens
```

```
       <400> 372
aagcttggca cgagggtctt gtcagcagcc cggccattgg agcatatctt tctgccagtt    60
acggagacag cctcgttgtg ctggtggcca cagtggtggc tcttctggac atctgcttca   120
tcttagtggc tgttccagaa tctctgcctg agaaaatgag accggtttcc tggggagctc   180
```

```
agatttcttg gaaacaagca gacccttttg cgtcgttgaa gaaagttgga aaagattcta     240
ctgtcttact aaatctgcat caccgtgtgt ctttcatacc ttcctgaagc tgggacagta     300
ttcaagtttt ttttctctat ctcagggcag gtcatagggt ttgggatctg ttaaaattgc     360
agcattcata gctatggtag gaattctgtc tattgtggct cagacggcct ttcttagcat     420
cttgatgaga tcattaggaa ataagaatac tgtcctcctt ggcttgggct tccagatgct     480
ccagttagcc tggtacggtt ttggatcaca ggcctggatg atgtgggcag cagggaccgt     540
ggctgccatg tccagcatca cgtttccggc aatcagtgcc ctcgtctctc ggaatgcaga     600
gtcagatcag caaggagttg cccaggggat cataactgga ataagaggac tatgcaatgg     660
cctggggcca gcactgtatg cttcatatt ctacatgttc catgtggaac tgactgagtt     720
gggcccgaaa ttgaattcta caacgttcc cctgcaggga gctgtcatcc caggcccgcc     780
gtttttattt ggggcatgta tagtccttat gtctttctg ctgccttat tcattcctga     840
atacagtaaa gccagtggag ttcaaaaaca cagtaacagc agcagcggca gcctgaccaa     900
cacccagaa cggggcagtg atgaggacat tgagccacta ctgcaagaca gcagcatctg     960
ggagctctct tcatttgagg agcctgggaa tcagtgcact gagctgtaaa ctcggcagaa    1020
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tcatggtgct ggatgggaga cgctagcggc atccttcagg gccaagtttg ataaatacca    1140
ccgccatcat tctgctcatc ctcctcctgt ttttttttt ctcttacatt ctttttttt    1200
tcccggttaa tccttaaaac cagaaaaaaa ttggaaaaac ttctttgcaa aaaggggggca    1260
actcccaggg ggaacctcaa ataaaaaaag cattctttg tgaaaaaagg agggcttcct    1320
tgaaaggaca aaa                                                        1333
```

```
        <210> 373
        <211> 2578
        <212> DNA
        <213> Homo sapiens
```

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        <400> 373
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        cccctggccc agcaaccccct gcccccggca ccggggggtga aggcatctcg aggagatgag     120
        gttctggtgg tgaacgtgag cggacggcgc tttgagactt ggaagaatac gctggaccgc     180
        tacccagaca ccttgctggg cagctcggag aaggaattct tctacgatgc tgactcaggc     240
        gagtacttct tcgatcgcga ccctgacatg ttccgccatg tgctgaactt ctaccgaacg     300
        gggcggctgc attgcccacg gcaggagtgc atccaggcct tcgacgaaga gctggctttc     360
        tacggcctgg ttcccgagct agtcggtgac tgctgccttg aagagtatcg ggaccgaaag     420
        aaggagaatg ccgagcgcct ggcagaggat gaggaggcag agcaggccgg ggacggccca     480
        gccctgccag caggcagctc cctgcggcag cggctctggc gggccttcga gaatccacac     540
        acgagcaccg cagcccctcgt tttctactat gtgaccggct tcttcatcgc cgtgtcggtc     600
        atcgccaatg tggtggagac catcccatgc cgcggctctg cacgcaggtc ctcaagggag     660
        cagccctgtg cgaacgctt cccacaggcc tttttctgca tggacacagc ctgtgtactc     720
        atattcacag gtgaatacct cctgcggctg tttgccgccc ccagccgttg ccgcttcctg     780
        cggagtgtca tgagcctcat cgacgtggtg gccatcctgc ctactacat tgggcttttg     840
        gtgcccaaga cgacgatgt ctctggcgcc tttgtcaccc tgcgtgtgtt ccgggtgttt     900
        cgcatcttca gttctccag gcactcacag ggcttgagga ttctgggcta cacactcaag     960
        agctgtgcct ctgagctggg ctttctcctc ttttccctaa ccatggccat catcatcttt    1020
        gccactgtca tgttttatgc tgagaagggc acaaacaaga ccaactttac aagcatccct    1080
        gcggccttct ggtataccat tgtcaccatg accacgcttg ctacggaga catggtgccc    1140
        agcaccattg ctggcaagat tttcgggtcc atctgctcac tcagtggcgt cttggtcatt    1200
        gccctgcctg tgccagtcat tgtgtccaac tttagccgca tctaccacca gaaccagcgg    1260
        gctgacaagc gccgagcaca gcagaaggtg cgcttggcaa ggatccgatt ggcaaagagt    1320
        ggtaccacca atgccttcct gcagtacaag cagaatgggg ccttgagga cagcggcagt    1380
        ggcgaggaac aggctgtttg tgtcaggaac cgttctgcct ttgaacagca acatcaccac    1440
        ttgctgcact gtctagagaa gacaacgtgc catgagttca cagatgagct caccttcagt    1500
        gaagccctgg agccgtctc gccgggtggc cgcaccagcc gtagcacctc tgtgtcttcc    1560
        cagccagtgg acccggaag cctgctgtct tcttgctgcc ctcgcagggc caagcgccgc    1620
        gccatccgcc ttgccaactc cactgcctca gtcagccgtg caggcatgc aggagctgga    1680
        catgctggca gggcttgcgc aggagccatg cccccttcaga gccgctccag ccttcaatgc    1740
```

176

```
caagccccat gacagccttg acctgaactg cgacagcggg ggacttcgtg gctgccatta    1800
tcagcatccc tacccctcct gccaacaccc cagatgagag ccaaccttcc tccctggcg     1860
gcggtggcag ggccggcagc accctcagga actccagcct gggtacccct tgcctcttcc    1920
ccgagactgt caagatctca tccctgtgag gggtaggcct gctgattcag agggtcctct    1980
tcatttttgg gaactccttt ccaaagccat attttttggga ggcagagagg ggcaggcttg   2040
ggcaccectt ctgccccccc cactgagaac tatgcaatgg agtttcatga aatggtccac    2100
atagtgggga agtagccagg aaatgagaaa cttcctccca ccccagacat ttttcctggt    2160
gggagctgaa gcactgggct tccacaggcc cctggcctcc ttgccctagc acactgggac     2220
tggccccact ctcccagctg gactcctgca tgctcctccc cttgggctct cagatgaagg    2280
caaagctttg atccgacatc tgagctctag cctaagaagg agagttgaga tttcctcctc    2340
cctctggctg ggatatggag ctttggaggt tcagagaaga gaaccctcac ctctgatctg    2400
gcctctacga gaggtcctca tctccatctg gcccaacaat tcccagattc tgaagcttgg    2460
gaatgcaaac acaggcttca tggggctgtg gccttctggc aggcgacctg ccatccccag    2520
ggccttgcct gaggggggttc aggcttgcct tttcccaaca cacactcaga taggcaca    2578
```

```
<210> 374
<211> 664
<212> DNA
<213> Homo sapiens
```

```
<400> 374
tgaggctggg gcaagccttt taaggactgg accacgggtg ggcaggatac cggggggagaa    60
cccgccctgt tagttggggc tggggagggc cgcgcaccga gactaaattg tccttccggg    120
cagatccgct caccaggccc tggcgacctg agcatctacg acaactggat ccggtacttc    180
aaccgcagca gcccggtgta cggcctggtc cccagagcaa gacttcagcc aggatctacc    240
ccacctacca cacagccttt gacacctttg actatgtgga caagtttttg gacccgggtg     300
aggagggaga caagggggcat cctgagacca ggacaggaga ggctgaagac tgagccctgg    360
ccttgtcacc ttgccgcagg cttcagcagc catcaggctg tggcccggac agcggggagt    420
gtgattctcc ggctcagtga cagcttcttc ctgccctca aagtcagtga ctacagtgag    480
acactccgca gcttcctgca ggcagcccag caagatcttg gggccctgct ggagcagcac    540
agcatcagcc tggggcctct ggtgactgca gtggagaagt ttgaggcaga agctgcagcc    600
ttgggccaac gcatatcaac actgcagaag ggcagccctg acccctgca ggtccggatg    660
ctca                                                                 664
```

```
<210> 375
<211> 1495
<212> DNA
<213> Homo sapiens
```

```
<400> 375
ggaattcgag gcgggggcag cctcgccagc gggggccccg ggcctggcca tgcctcactg    60
agccagcgcc tgcgcctcta cctcgccgac agctggaacc agtgcgacct agtggctctc    120
acctgcttcc tcctgggcgt gggctgccgg ctgaccccgg gtttgtacca cctgggccgc    180
actgtcctct gcatcgactt catggttttc acggtgcggc tgcttcacat cttcacggtc    240
aacaaacagc tggggcccaa gatcgtcatc gtgagcaaga tgatgaagga cgtgttcttc    300
ttcctcttct tcctcggcgt gtggctggta gccatggcg tggccacgga ggggctcctg    360
aggccacggg acagtgactt cccaagtatc ctgcgccgcg tcttctaccg tccctacctg    420
cagatcttcg ggcagattcc ccaggaggac atggacgtgg ccctcatgga gcacagcaac    480
```

```
tgctcgtcgg  agcccggctt  ctgggcacac  cctcctgggg  cccaggcggg  cacctgcgtc      540
tcccagtatg  ccaactggct  ggtggtgctg  ctcctcgtca  tcttcctgct  cgtggccaac      600
atcctgctgg  tcaacttgct  cattgccatg  ttcagttaca  cattcggcaa  agtacagggc      660
aacagcgatc  tctactggaa  ggcgcagcgt  taccgcctca  tccgggaatt  ccactctcgg      720
cccgcgctgg  ccccgccctt  tatcgtcatc  tcccacttgc  gcctcctgct  caggcaattg      780
tgcaggcgac  cccggagccc  ccagccgtcc  tccccggccc  tcgagcattt  ccgggtttac      840
ctttctaagg  aagccgagcg  gaagctgcta  acgtgggaat  cggtgcataa  ggagaacttt      900
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cagaaggtgg  acttggcact  gaaacagctg  ggacacatcc  gcgagtacga  acagcgcctg     1020
aaagtgctgg  agcgggaggt  ccagcagtgt  agccgcgtcc  tggggtgggt  ggccgaggcc     1080
ctgagccgct  ctgccttgct  gccccaggt   gggccgccac  cccctgacct  gcctgggtcc     1140
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gcatgcccgg  ctcctcccag  aaccagtccc  agcctgggag  gatcaaggcc  tggatcccgg     1380
gccgttatcc  atctggaggc  tgcagggtcc  ttggggtaac  agggaccaca  gaccccctcac   1440
cactcacaga  ttcctcacac  tggggaaata  aagccatttc  agaggaaaaa  aaaaa          1495
```

```
<210> 376
<211> 373
<212> DNA
<213> Homo sapiens
```

```
<400> 376
gcctcataaa  actctgcaaa  tctaaggcca  aaagctgtga  aaatgacctt  gaaatgggca       60
tgctgaattc  caaattcaag  aagactcgct  accaggctgg  catgaggaat  tctgaaaatc      120
tgacagcaaa  taacactttg  agcaagccca  ccagatacca  ggcgagctga  aggaaatcaa      180
gcaagatatc  tccagcctgc  gctatgagct  tcttgaggaa  aaatctcaag  ctactggtga      240
gctggcagac  ctgattcaac  aactcagcga  gaagtttgga  aagaacttaa  acaaagacca      300
cctgagggtg  aacaagggca  aagacattta  gcagcccaca  tcggcgtctg  tgacttctac      360
cagcattcca  agg                                                            373
```

```
<210> 377
<211> 2867
<212> DNA
<213> Homo sapiens
```

```
<400> 377
cttcctcttc  tccacgcagg  cttcaacagg  agatttatgg  agaatagcag  cataattgct       60
tgctataatg  aactgattca  aatagaacat  ggggaagttc  gctcccagtt  caaattacgg      120
gcctgtaatt  cagtgtttac  agcattagat  cactgtcatg  aagccataga  aataacaagc      180
gatgaccacg  tgattcagta  tgtcaaccca  gccttcgaaa  ggatgatggg  ctaccacaaa      240
ggtgagctcc  tgggaaaaga  actcgctgat  ctgcccaaaa  gcgataagaa  ccgggcagac      300
cttctcgaca  ccatcaatac  atgcatcaag  aaggaaagg   agtggcaggg  ggtttactat      360
gccagacgga  atccggggga  cagcatccaa  cagcacgtga  agatcacccc  agtgattggc      420
caaggaggga  aaattaggca  ttttgtctcg  ctcaagaaac  tgtgttgtac  cactgacaat      480
aataagcaga  ttcacaagat  tcatcgtgat  tcaggagata  attctcagac  agagcctcat      540
tcattcagat  ataagaacag  gaggaaagag  tccattgacg  tgaaatcgat  atcatctcga      600
```

```
ggcagtgatg caccaagcct gcagaatcgt cgctatccgt ccatggcgag gatccactcc    660
atgaccatcg aggctcccat cacaaaggtt ataaatataa tcaatgcagc ccaagaaaac    720
agcccagtca cagtagcgga agccttggac agagttctag agattttacg gaccacagaa    780
ctgtactccc ctcagctggg taccaaagat gaagatcccc acaccagtga tcttgttgga    840
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gtgcaccaga gtcacagtca ccttgcaatg ccaataacca tcaatgatgt tccccttgt     960
atctctcaat tacttgataa tgaggagagt tgggacttca acatctttga attggaagcc   1020
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tgtgagtttt taaactgttc tgaaaccact cttcgggcct ggttccaagt gatcgaagcc   1140
aactaccact cttccaatgc ctaccacaac tccacccatg ctgccgacgt cctgcacgcc   1200
accgctttct ttcttggaaa ggaaagagta aagggaagcc tcgatcagtt ggatgaggtg   1260
gcagccctca ttgctgccac agtccatgac gtggatcacc cgggaaggac caactctttc   1320
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tttggcaaca gagatgacaa aacactttga acatgtgaat aagtttgtga acagcatcaa   1560
caagccaatg gcagctgaga ttgaaggcag cgactgtgaa tgcaaccctg ctgggaagaa   1620
cttccctgaa aaccaaatcc tgatcaaacg catgatgatt aagtgtgctg acgtggccaa   1680
cccatgccgc cccttggacc tgtgcattga atgggctggg aggatctctg aggagtattt   1740
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gtttgatgct tgggatgcct ttgcacatct accagccctg atgcaacatt tggctgacaa   1920
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caggctaaag ccaagccaca gagggggcct cttgaccgac aaaggacact gtgaatcaca   2040
gtagcgtaaa caagaggcct tcctttctaa tgacaatgac aggtattggt gaaggagcta   2100
atgtttaata tttgaccttg aatccattcc aagtccccca aatttccatt ccttagaaag   2160
ttatgttccc atgaagaaaa atatatgttc cttttgaata cttaaatgac agaacaaata   2220
cttgggcaaa ctcccttttgc tctgcctgtc atccctgtgt acccttgtca atcccatggg   2280
ggctggttca ctgtaactag caggccacag ggaaggcaaa gccttgggtg cctgtgagct   2340
catctcccgg gatgggtgac taagtaggct taggctaggt gatcagctca tcctttacca   2400
taaaagtcat cattgctgtt tagcttgact gttttcctca agaacatcga tctgaaggat   2460
tcataaggag cttatctgaa cagatttatc taagaaaaaa aaaaaaccga cttaaaatag   2520
gggaagcaac taggaccaaa ttacagataa actagttagc ttcacagcct ctatggctac   2580
atggttcttc tggccgatgg tatgacacct aagttagaac acagccttgg ctgggggtg    2640
ccctctctag actggtatca gcagcctgtg taaccccttt cctgtaaaag gggttcatct   2700
taacaaagtc atccatgatg agggaaaaag tggcatttca tttttgggga atccatgagc   2760
ttcctttatt tctggctcac agaggcagcc acgaggcact acaccaagta ttatataaaa   2820
gccattaaat ttgaatgccc ttggacaagc ttttcttaaa aaaaaaa              2867
```

```
<210> 378
<211> 8053
<212> DNA
<213> Homo sapiens
```

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<211> 607
<212> DNA
<213> Homo sapiens
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<400> 381
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<211> 4197
<212> DNA
<213> Homo sapiens
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        <211> 1843
        <212> DNA
        <213> Homo sapiens



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   aatgggtgtg tggagcagcc ctgttctccc catcccgtag agctccagga agttaaccag     180
   ggacttcagc tgcgacctgc agatttctaa gcccccctgt tatttctctg tcttttacgg     240
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   ttatgctgaa aggtgggaac ttcttctcca agcacgtgcc ctggagttac ctcgtctttc     360
   taactatcta tggggtggag ctgttcctga aggttgccgg cctgggccct gtggagtact     420
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   cgtctcttct atgcaataac acaatagtat tactctactg cgatgtacgg aactgcggtg    1440
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        <211> 1459
        <212> DNA
        <213> Homo sapiens



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   aaggtggtcc tgtcggatgc ctacgcgcac ccccagcaga aggtggcagt gtacagggct     180
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<211> 2408
<212> DNA
<213> Homo sapiens

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<222> (1)...(2408)
<223> n = a,t,c or g
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ggcggtctga gaggcccca tatgccccct gcgacaggcg gtcattgctc tcgctgggtc     1560
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187

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<211> 2204
<212> DNA
<213> Homo sapiens

<400> 386

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        <212> DNA
        <213> Homo sapiens
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<210> 389

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<212> DNA
<213> Homo sapiens

<220>
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<223> n = a,t,c or g




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<210> 390
<211> 1325
<212> DNA
<213> Homo sapiens
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<400> 390

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<210> 391
<211> 1458
<212> DNA
<213> Homo sapiens

<400> 391

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<210> 392
<211> 1667
<212> DNA
<213> Homo sapiens

<400> 392
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cgggcgggcg cggaggccag gacttgcatt gtgtgtgcag gacgtgccca gacgcacacc    600
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ggcaggcaga tgggaaggcc gcctccggac acagcagcac agaggggcgt ctggggttca    720
agtatccacc cagggcaggc gggacctcga ccggagcgtc tttggacaga cagagcttga    780
gaaaaccaag tcccgcggga ccagcgttca aaaggcactc aaagcgaagg tcaccagggg    840
tcagaggtca ctgcttccgc aggaggagac ggcccacgca ggaaaaagtc agggtctggg    900
ggcgtcccag gtctggccaa ggcaggtggt cccctagctc ccagtcaggt gcagctcctc    960
acaagctctc gctgctggac gtggtgctgg ccacgtcatc agggtcgagg gtgcacagcc   1020
gcaggtcaca gctctccggg gcgcccccgt cagcccccag catccaggga tgggccgcaa   1080
tctgatccag cgacggccgc tctgagggcc gcagggacag gcaccaccgg atcagctgct   1140
ggcactctgg agagaccctc ctccggaaga gcaggcggcc tcggaggatc tcctcgtcct   1200
gctcgaaggg gatgtcccca cacaccatat cgtagagaag cacgcccagc gaccacacgg   1260
tggccgagcg cccgtggtag cggtggtagc ggatccactc cggggggctg tacactcggg   1320
tgccgtcgaa gtcggtgtag accgtgtcct tgagcagcgc acccgaaccg aagtcgatga   1380
gcttgagctc tccggagcgc aggtccacaa gcagattttc gtccttaatg tcgcggtgca   1440
cgaccccgca gctgtggcag tggcgcacgg cggccagcac ctgcgcgaag aaagcggcgc   1500
gccagcggct cgtccagggc gccgcgctcc gtgataaagt cgaagatggt cctagcgccg   1560
gctcgggccg ctccagcacc agcaggaagc cgtcgggccg ctcgaaccag tccagcaggc   1620
ggatgacgcc gcgcgcgccg cccggcgcgc ccaccttgcg cagcagc                1667
```


<210> 393
<211> 1938
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1938)
<223> n = a,t,c or g
```
```

<400> 393

```
gtggaaagaa cagtcagaaa gcctctcctg tggatgatga acagctgtca gtctgtcttt      60
ctggattcct agatgaggtt atgaagaagt atggcagttt ggttccactc agtgaaaaag     120
aagtccttgg aagattaaaa gatgtcttta atgaagactt ttctaataga aaaccattta     180
tcaatatggga aataacaaac tatcgggcca gacatcaaaa atgtaacttc cgtatcttct     240
ataataaaca catgctggat atggacgacc tggcgactct ggatggtcag aactggctga     300
atgaccaggt cattaatatg tatggtgagc tgataatgga tgcagtccca gacaaagttc     360
acttcttcaa cagctttttt catagacagc tggtaaccaa aggatataat ggagtaaaaa     420
gatggactaa aaaggtggat ttgtttaaaa agagtcttct gttgattcct attcacctgg     480
aagtccactg gtctctcatt actgtgacac tctctaatcg aattatttca ttttatgatt     540
cccaaggcat tcattttaag ttttgtgtag agaatataag aaagtatttg ctgactgaag     600
ccagagaaaa aaatagacct gaatcttcag ggttggcaga ctgctgttac gaagtgtatt     660
ccacaacaga aaaacgacag tgactgtgga gtctttgtgc tccagtactg caagtgcctc     720
gcccttagag cagcctttcc agttttcaca agaagacatg ccccgagtgc ggaagaggat     780
ttacaaggag ctatgtgagt gccggctcat ggactgaaac tcagcaggga ctctgggaag     840
tctgaccaag ttggagcaga tggtttgtta cttgaatctc caaacactta gttgaatttt     900
tacagatatt tcagatcagt gggtgttggg gccactattg ttacctccaa attttatttt     960
ttgcccttaa ttccatttct cccagctacc atgtactatt gtttaatgtt cagtttggtt    1020
tcattttttaa ttttatggtt ctgtgcgtcc cccatattta atatttatta ttcaaacgca    1080
tgcatataga cagagcatgc agtgaagagt attaaaaaaa aaagcttagt agatttggtg    1140
cagcttttga aacttaggtt agacgtgaaa ctgaaataca ggtttcaaat ttacttcccc    1200
agaacctaaa aatgcaagat gttttgata ccaaccataa cctcctgaga atagtaagtg    1260
ttccccccggg gcattaaggg taagcctggg ggtggttttt gaccaaatcc cagtccctgt    1320
tttacctttta cccagcggca actttcaccc aacttcccct ctcccaagtg agtcttagag    1380
agtgcagtcc cattcctttt tgaagggtga gatggaagtg gtcgtaaact gactggtgtc    1440
ttctgtttct gggaggcaca cttgtaaggc acagtggctg ctttgggagg agtaaggtgt    1500
gagaaaaagc aaccttggag gccagtaaca atgacagatt tcaatcgtgg ttttaggaat    1560
tataatacgt ggcatacatc tcataaaggc ttttgctggg atattgaatt ccctgaattt    1620
ttctgttttc gacctgttaa aaaaatctta acatccatca aactagtggt caaacaaatg    1680
agaatgcagc tgttctcaga gtaattttta agttgtcatt tccctgtgtt gcctcccaat    1740
tggaagaagt taaggtttac caaatgcatt tctatttcaa gggtatctga aacgtaaaca    1800
ttcaaaactg aaggctgact gacttnagat gttttgcagg tggctggaga gaacagggaa    1860
ggtaatagag acacacttag tcccatggga agcgcagcac cgttgtaggt tctttctcct    1920
gtcccattag cgacctca                                                  1938
```

<210> 394
<211> 1283
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1283)
<223> n = a,t,c or g

<400> 394

```
gatttcagtt gcctgaaagc tgtaagtctg cttttttaaa agagaaattg gagttaagca      60
gacttttcat ttttttgatca tgaccctgga aagagaaata tatttgacat caaaactcag     120
cacatatcct tggtctatat atacacatga aagtttcata aaacaataca ctgatatttt     180
ccatgctgta ttctatttca ttttttaaaa tgctggttgt atcccattaa actggtttca     240
aaataaatat aacatgtaca caacaacaac aaaaaaaaac actgggttag agggccagta     300
agctcagcga gtatcagcaa ctgagacttc atccttgtct cacaaggact aaaaagagaa     360
taatgttctc attatgtggt tcaatgccac acccatgtat ctgagatata catgtcacaa     420
tctgggagaa gcctgtcctc aatttacttt aaatacccaa ttctgcctag aacatgaatt     480
```

194

```
agacacatag taagctcttg agtgaagtgc agatgataat gacacgatca cataccactt    540
aaaaatatct taacaccttt acttagatct catctcatac ttgtagcatt tcttcaaatt    600
tactttgaaa aaagagcttc actgtgtgtg gttgtcatac acattcttct acccaaccat    660
ggacctcttt tttcctctca ggcgcacttc atctaatttt tttagcactg gcctggcctt    720
tttggaggag gtggagtagc tcttcagaaa ggcttcaaac acagtttcag tgttgggatg    780
ggtactgagg aaggccttct ccaggacata gaggtctact cccttatcct ctggaagtgc    840
tgaaatgaaa ctcagcccaa agtctatgag cacaatgttc agctgttcca gggggggttt    900
caggagcatg ttggaggtgg tgagatcacc atgaatgagg tcttcatcgt gcattcgagc    960
caaaacctgc ccaattgtct tggctaagtt ggagagaccc tggggagttt ttttcagtct   1020
ccatagtgga ctgaatataa tctcgaacag tcactgagcc ttcaatttct tccatatata   1080
agcagttgga agcatagtcc acaaaaaaga caactggggc agatattcca gcgcggcgac   1140
agcggaggag cgcccgggcc tcctgcaccg tccgccgtct gccaagccgc gcctccagcg   1200
ccgggtgccg gtagccttgg gaagcggtgc ttnnttncnn ggccttgcta gcccccctggc   1260
tcattnnccc cggcccggtc tcc                                           1283
```

<210> 395
<211> 2149
<212> DNA
<213> Homo sapiens

<400> 395
```
acgagcctgc gttttccggc cagaggacat gatgcagggg gaggcacacc ctagtgcttc     60
ccttattgac agaaccatca agatgagaaa agaaacagag gctaggaaag tggtcttagc    120
ctggggactc ctaaatgtat ctatggctgg aatgatatat actgaaatga ctggaaaatt    180
gattagttca tactacaatg tgacatactg gcccctctgg tatattgagc ttgcccttgc    240
atctctcttc agccttaatg ccttatttga ttttttggaga tatttcaaat atactgtggc    300
accaacaagt ctggttgtta gtcctggaca gcaaacactt ttagggttga aaacagctgt    360
tgtacagact acgcctccac atgatctggc agcaacccaa atccctcccg ctccaccttc    420
cccttcaatt cagggtcaga gtgtgttgag ttatagccct tctcgttcgc ccagtaccag    480
tcccaagttc accaccagct gtatgactgg ttacagccct cagctgcaag tctgtcctc    540
aggtggcagt ggttcttata gccctggagt gacctactcg cccgtcagtg gttataataa    600
gttggcgagc tttagcccct ctcctccttc tccgtaccct accactgttg gaccagtgga    660
gagcagtgga ttgagatctc gctaccgttc ttcacctacc gtctacaact cacctactga    720
caaagaagac tacatgaccg acctacgaac tttggatact tttctcagaa gtgaagagga    780
gaaacagcat agggttaagc tggggagccc agattctacc tctccttcca gcagtcctac    840
tttctggaac tatagtcgtt ctatggggga ttatgcacaa actttaaaga gtttcagta    900
tcagcttgcc tgtaggtctc aggccccatg tgctaacaaa gatgaagccg atctcagctc    960
taaacaagcc gcagaagagg tctgggcaag agtggctatg aatagacaac ttcttgatca   1020
tatggattca tggacagcta aatttagaaa ttggatcaat gagacaatat tagtgccact   1080
tgttcaagag attgagtctg tcagcacaca gatgagacga atgggttgtc cagagctaca   1140
gataggagag gctagtatta ctagcttgaa acaagctgcc ctggttaaag cgcctctcat   1200
tccgactttg aacacaatcg ttcagtatct agaccttact ccaaatcagg aatacttgtt   1260
tgaaaggatc aaagaactat ctcagggagg ttgtatgagc tcatttcgat ggaacagagg   1320
tggcgacttc aaaggacgaa agtgggatac agacctgccc accgattctg ctatcatcat   1380
gcatgtattt tgcacctacc ttgattccag attacctcca catccgaagt atcccgacgg   1440
aaaaactttt acttctcagc actttgttca gacaccaaat aaaccagatg ttacaaatga   1500
gaatgttttt tgcatttatc agagtgctat caaccctccc cattatgagc tcatctacca   1560
gcgtcatgta tacatacctg ccaaagggca gaaataatat gtttcataca ttgttgatgt   1620
ttctctacat cataaagacc aaagagtcag gaatgcttgg gagagttaat cttggtctat   1680
ctggtgtgaa tatattgtgg atctttggcg agtagcaagt catatattta attctgacat   1740
ttagactatt tcactgaacc agaagtcgaa actaaacatc tctgagccac tgactcttct   1800
gaaataaaat acacatgggt gtatgttaca gactctttag atttaacaga aaatgtagct   1860
gttatgaaat gtaattgtaa aaatatgtcc cgtatcttct atatcgagac attgccttta   1920
attttatatc gcttttcaga aatttcagtt gactacaaaa ctgcaaccct cggattttt   1980
attgactcaa aatagtgcca ttccccttaa tgaaatagat tttgagtctt ttttcattg   2040
taacccccaa atgagaatca tctacctgat tcttgtacca aaaaaaaatt tttttcagtc   2100
```
```
195
```

```
tttttttttt ttaaagaggg tttttgccaa cccaaactgg agggcaggg              2149
```

```
        <210> 396
        <211> 1895
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 396
actgtagacc attagtccag tgcggtggaa ttcatcaacc gaaacaacag tgtggtacag        60
gtcctgcttg ctgctggggc tgatccaaac cttggagatg atttcagcag tgtttacaag       120
actgccaagg aacagggaat ccattctttg gaagtcctga tcacccgaga ggatgacttc       180
aacaacaggc tgaacaaccg cgccagtttc aagggctgca cggccttgca ctatgctgtt       240
cttgctgatg actaccgcac tgtcaaggag ctgcttgatg gaggagccaa ccccctgcag       300
aggaatgaaa tgggacacac acccttggat tatgcccgag aaggggaagt gatgaagctt       360
ctgaggactt ctgaagccaa gtaccaagag aagcagcgga agcgtgaggc tgaggagcgg       420
cgccgcttcc ccctggagca gcgactaaag gagcacatca ttggccagga gagcgccatc       480
gccacagtgg gtgctgcgat ccggaggaag gagaatggct ggtacgatga agaacaccct       540
ctggtcttcc tcttcttggg atcatctgga ataggaaaaa cagagctggc caagcagaca       600
gccaaatata tgcacaaaga tgctaaaaag ggcttcatca ggctggacat gtccgagttc       660
caggagcgac acgaggtggc caagtttatt gggtctccac caggctacgt tggccatgag       720
gagggtggcc agctgaccaa gaagttgaag cagtgcccca atgctgtggt gctctttgat       780
gaagtagaca aggcccatcc agatgtgctc accatcatgc tgcagctgtt tgatgagggc       840
cggctgacag atggaaaagg gaagaccatt gattgcaagg acgccatctt catcatgacc       900
tccaatgtgg ccagcgacga gatcgcacag cacgcgctgc agctgaggca ggaagctttg       960
gagatgagcc gtaaccgtat tgccgaaaac ctggggggatg tccagataag tgacaagatc      1020
accatctcaa agaacttcaa ggagaatgtg attcgcccta tcctgaaagc tcacttccgg      1080
agggatgagt ttctgggacg gatcaatgag atcgtctact tcctcccctt ctgccactcg      1140
gagctcatcc aactcgtcaa caaggaacta aacttctggg ccaagagagc caagcaaagg      1200
cacaacatca cgctgctctg ggaccgcgag gtggcagatg tgctggtcga cggctacaat      1260
gtgcactatg gcgcccgctc catcaaacat gaggtagaac gccgtgtggg gaaccagctg      1320
gcagcagcct atgagcagga cctgctgccc aggggggctgt actttgcgca tcacggtgga      1380
ggactcagac aagcagctac tcaaaagccc agaactgccc tcaccccagg ctgagaagcg      1440
cctccccaag ctgcgtctgg agatcatcga caaggacagc aagactcgca gactggacat      1500
ccgggcacca ctgcaccctg agaaggtgtg caacaccatc tagcagccac ctgcctgctc      1560
ctatgtgccc tcaccatcca ataaaggccc cttggctgtg gcatggcaaa aaaaaaaaa       1620
agggggggcc gtttaaaaga ccccttgggg ggcccaaatt taacccgggc gggcaaggaa      1680
aaattttttt ccttatgggg ggccgaataa aaaccaacct gggaattttg ggaaagaacc      1740
cttattttgg ggggggggaca aattgggcca acctccctac aaaaattaaa ggctttaggg      1800
aaaaaaaaaa tttttaaggg gaaaaggggg aaaaacaacc ggcataccct ggcggttgga      1860
aagttttgtt tacggagtat gatttagaaa aattt                                 1895
```

```
        <210> 397
        <211> 2416
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(2416)
        <223> n = a,t,c or g
```

```
      <400> 397
ttttttttttt  ttttttttttca  caagttatat  tttattttaa  cacgaggatt  aacatatagt    60
tacaaggtca   atacaagcct    ccagtggaag  ctctttattt  ggtttaattc  catctccaga   120
gacaaacagg   caactctagg    acctttacag  tggcgatcgg  cctccacnac  agcaaaatgc   180
ctccaaagtt   tagaattagt    gcaacacaca  tacgaacgtt  ttaaaggtgc  tcaacatcag   240
gttaaaatag   aattctggac    ctttttaaaa  agttttttgga  tgatataagc  acaggaggca   300
gagccaataa   gaaacatgaa    accaatattt  ctggaaaaac  acttagcatg  aacgtcactt   360
tttgacgtcg   tgtaaacttt    cttctgcaat  gacggatgtt  accaaaaggc  attgagacct   420
ttgcgctgcg   ctggttagac    aagccgcagg  cttatctcca  cggtgagcag  gataaaaacc   480
cccaaggaac   agcccatgac    aaccttctgt  gccttttttat actttcccat  cctacaaagg   540
aaaaactggg   taaaggacaa    gttcctccct  ttcattgcgt  ttctaagaac  ttttcagggc   600
aggttctttt   aaaattagtc    atcttacaac  acaacagtat  tctagcacgg  tggcgaagtg   660
acaggcggca   gatacggggg    aggaaggaga  cgttcacggg  aaattccaca  ttctactcta   720
tgtgaactgc   tccagaaaaa    tacagacatg  atttcacagt  aggattccca  gagtaaatga   780
tgatacatag   gacaactgac    ctcctctaag  aagcccggct  ggggcagcag  tgagctttc    840
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tataacattc   tttttggacg    caggtggtgg  aaaagtttaa  aaaacaggcg  gaggagtgac   960
gggggggatac  aagcatatcc    tatactgggg  gtgacggtca  ttcaaagagc  aaattactgc  1020
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gatgcgacgc   acatgcattc    ccgaggctct  aaaatcccat  tttaaagaac  cgtttcacat  1140
cctcgtggag   tggagagtgg    tccacttgac  ttggtgaggt  cagaagttcc  tgaagatccc  1200
tgtcgtcccc   gttggcgggg    gagcccattg  tggagctgtg  gggactgcca  cactcaccat  1260
gcacctgttg   gtttgcaggg    acagaggtgc  ggccttgact  cttctcaccc  tgtgtcatcc  1320
gggcttgtct   ttcgtctgtc    aagtcagtcc  tcctgcgtga  ctgatgggtg  caccacgctt  1380
aggtcacccg   ttgcagggac    cggaagtcca  tggctctgcc  gcaaccctga  gcggtttgca  1440
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gccacttcct   cttcacctgc    ctgggcctca  gcgtctctgc  gcttgtggtt  tctcgtcccc  1560
gagggctgac   tgagctgctc    cggaagggtg  gtgtgtggtc  aaccttggtt  ggctgagagg  1620
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actgaggatg   cttgaggggga   ccacctagtt  accaaagcca  agcaaagaat  aaagctgccc  1800
gacatcatcc   ccaggcttcc    gtggcgctct  cggtcacagg  agctttaggc  caatggttcc  1860
tcttgactgt   ttttgcccca    aatgagagga  ggggctgctt  tgctttaagg  cgtggcggcg  1920
gggggggggt   ggtggccaca    gattagggga  cctcaggttt  tcctcaaaaa  cccacacagg  1980
gaaagaaact   tggctctaaa    agcaaactca  acgaattcca  catgccctga  agagcacgtg  2040
ataaaataca   agggtggtgg    cggcgggatc  cctcaaagga  ccacgagagg  cacgggtct   2100
ttggtgatga   aagtgctaac    ctcggcgggg  tgcggtagct  cacacctgta  atctcagcac  2160
tttgggaggc   tgaggcgggc    ggatcacctg  aggtcaggag  tttgagacca  gcctgaccaa  2220
cacggtgaaa   ccctgtctct    actaaaaata  caaacattag  ccgggcgtgg  tggtgcacgc  2280
ctgtaatcac   agctatttgg    gaggctgagg  caggagaatc  gctggaaccc  aggaggtgga  2340
ggttgtagtg   agccgagatc    atgccactgc  actccagtct  gaacaataga  gcgagactcc  2400
cgtctcaaaa   aaaaaa                                                        2416
```


      <210> 398
      <211> 1495
      <212> DNA
      <213> Homo sapiens


```
      <400> 398
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caccttaaaa   aacctgggcc   ccagataatt  gttgaacctc  agatttagga  aggaaaattt   120
ccaagctgtc   agctaaaggc   agtttccccc  atttcacaga  atatgtggta  gaagttccga   180
gtaaggaatt   ttttcagcag   ccatgaaagc  tccctgcata  aggaagactc  agtgtgcaac   240
```

```
atctgaaagc agtattgcca gagcatgact gtggcaatga agcaaaatgt tccctccacc    300
tatccctccc tcccatgtat aatgcttgaa gggtcagtcc ctgaaataag tagagagaaa    360
agtgtttgct gaaagagcta atacataagt caaccttcac tggtaccaat gaaggcttcc    420
cagttcaaaa ttcaacaccc agaaaaggca gaaattttag ctttaaatta agtttaaatt    480
ttcagttatc ccagtggact aggcatttaa atctgaggag ttccctgaga ttccatatga    540
ggaaatgaaa aacattagct tgtggattaa atttaaagag actgtaagga gaaaaacata    600
ttttatgaca tgcctcttaa ggactcctat tatttcaatg aatttgttac agttataata    660
tgcttgtgat aaaaaggcat tatttattaa gaaatctaaa atgtaataat atttcaatta    720
tatagtttta gagaaccttt cttgcccaac acttttctga tagcaagttg gacatccttg    780
tttctgaggc tataaaccat ggggtttagt aatggagtga caatcgtgta tgtcaccgtc    840
accagcctgt ctttgttgga cacatagttt gctgtaggcc tcaggtagat gaaggaagca    900
cagccataat gaacaataac aacactgagg tgagaggcgc aggtggaaaa cgctttccgt    960
ctgccctcag ctgagggaat cttcaggata gtcctcagaa tgcagaaata agaaacacag   1020
ataaacagaa agggaaccac aagtacaaga actccacaaa tgaatatcac aaatccgtta   1080
acatctgtgt tggtacaagc cagaagaatg actgctgaga tgtcacagaa gtaatgattg   1140
actttgttgg tgctacaaaa agggaggctg aaaactaaat ttactactgt aagagaggcc   1200
aagaagccac caattgcaca ggcagctgcc agttttccac acacctgcca gctcataaga   1260
gtggggtaat gcagagggtg acaaatggca gcatagcgat cataacccat cacacccaat   1320
agcaggcagt tggtaatggc aaaaccaagg aagaagaaca tttgaagagc acaacagttg   1380
aaggagattg tcctggccac agaaagtaga ttgatgagca tcttgggtag aatgacaaag   1440
gtgtagaagt ctcagatgtt gagagaaagc caggaagagg ccattggtgt gtgga         1495
```

```
<210> 399
<211> 2752
<212> DNA
<213> Homo sapiens
```

```
<400> 399
gcgaccgcca gcggctacac ggtacccgcg tgagaagctc aagtccatga cgtcccggga     60
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198

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199

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<211> 1264
<212> DNA
<213> Homo sapiens
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203

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<211> 2001
<212> DNA
<213> Homo sapiens

<220>
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<222> (1)...(2001)
<223> n = a,t,c or g


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<210> 407
<211> 1652
<212> DNA
<213> Homo sapiens
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      <211> 668
      <212> DNA
      <213> Homo sapiens




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        <212> DNA
        <213> Homo sapiens




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        <211> 1147
        <212> DNA
        <213> Homo sapiens




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206

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<211> 2234
<212> DNA
<213> Homo sapiens
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207

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<211> 2457
<212> DNA
<213> Homo sapiens

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<210> 413
<211> 1042

208

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<212> DNA
<213> Homo sapiens




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<210> 414
<211> 1849
<212> DNA
<213> Homo sapiens




<400> 414
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cacagaaaac cttccctcct ggctcaccca ggtcccctgg tgaaatcagg agagagagtc    420
atcctgcaat gttggtcaga tatcatgttt gaacacttct ttctgcacaa agaggggatc    480
tctaaggacc cctcacgcct cgttggacag atccatgatg gggtctccaa ggccaacttc    540
tccatcggtc ccatgatgca agaccttgca gggacctaca gatgctacgg ttctgttact    600
cactccccct atcagttgtc agctcccagt gaccctctgg acatcgtcat cacaggtcta    660
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```

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        <210> 415
        <211> 2555
        <212> DNA
        <213> Homo sapiens
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        tgccccaccg cttgcatctg tgccactgac atcgtcagct gcaccaacaa aaacctgtcc   180
        aaggtgcctg ggaacctttt cagactgatt aagagactgg acctgagtta taacagaatt   240
        gggcttctgg attctgagtg gattccagta tcgtttgcaa agctgaacac cctaattctt   300
        cgtcataaca acatcaccag catttccacg ggcagttttt ccacaactcc aaatttgaag   360
        tgtcttgact tatcgtccaa taagctgaag accggtgaaa aatgctgtat tccaagagtt   420
        gaaggttctg gaagtgcttc tgctttacaa caatcacata tcctatctcg atccttcagc   480
        gtttggaggg ctctcccagt tgcagaaact ctacttaagt ggaaattttc tcacacagtt   540
        tccgatggat ttgtatgttg gaaggttcaa gctggcagaa ctgatgtttt tagatgtttc   600
        ttataaccga attccttcca tgccaatgca ccacataaat ttagtgccag gaaaacagct   660
        gagaggcatc taccttcatg gaaacccatt tgtctgtgac tggttccctg gtctccttgc   720
        tggtcttttg gtatcgtagg cactttagct cagtgatgga ttttaagaac gattacacct   780
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        tgtattcttg tatcgcaatg aataagcaac gcctgttaaa tgaaactgtg gacgtcacaa  1140
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        cgagggggaa atctgactca gattcagtca attcagtgtt ttctgacaca ccttttgtgg  1560
        cgtccactta atttgtgcct atatttgtat gatgtcataa tttaatctgt tcatatttaa  1620
        ctttgtgtgt ggtctgcaaa ataaacagca ggacagaaat tgtgttgttt tgttctttga  1680
        aatacaacca aattctctta aaatgattgg taggaaatga ggtaaagtac ttcagttcct  1740
        caatgtgcca gagaaagatg gggttgtttt ccaaagttta agttctagat cacaatatct  1800
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        ccctttattt aggatattga agaaaaaat aaacttatg tattagtgtc ctttaaaaat  1920
        agactttgct aacttactag taccagagtt attttaaaga aaaacactag tgtccaattt  1980
        catttttaaa agatgtagaa agaagaatca agcatcaatt aattataaag cctaaagcaa  2040
        agttagattt gggggttatt cagccaaaat taccgtttta gaccagaatg aatagactac  2100
        actgataaaa tgtactggat aatgccacat cctatatggt gttatagaaa tagtgcaagg  2160
        aaagtacatt tgtttgcctg tcttttcatt ttgtacattc ttcccattct gtattcttgt  2220
        acaaaagatc tcattgaaaa tttaaagtca tcataatttg ttgccataaa tatgtaagtg  2280
        tcaataccaa aatgtctgag taacttctta aatccctgtt ctagcaaact aatattggtt  2340
        catgtgcttg tgtatatgta aatcttaaat tatgtgaact attaaataga ccctactgta  2400
        ctgtgctttg gacatttgaa ttaatgtaaa tatatgtaat ctgtgacttt gatattttgt  2460
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tttatttggc tatttaaaaa cataaatcta aaatgtctta tgttatcaga ttatgctatt    2520
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        <211> 2950
        <212> DNA
        <213> Homo sapiens
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gacaactggg ctcctctgta aatatacagc tcaaaggttc aagccaaagt ataaattctt    180
tcacaagtca ttccaggagt acacagcagg acgaagactc agcagtttat tgacgtctca    240
tgagccagag gaggtgacca aggggaatgg ttacttgcag aaaatggttt ccatttcgga    300
cattacatcc acttatagca gcctgctccg gtacacctgt gggtcatctg tggaagccac    360
cagggctgtt atgaagcacc tcgcagcagt gtatcaacac ggctgccttc tcggactttc    420
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gcaagaaatt ctgaaagcca taaacatcaa ttcctttgta gagtgtggca tccatttata    540
tcaagagagt acatccaaat cagccctgag ccaagaattt gaagctttct ttcaaggtaa    600
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gcccaattgt gcaagtgctc tggacttcat taaactgggc tttttatgggg gagctatggc    720
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ctacattccc agcagggctg tatctttgtt cttcaactgg aagcaggaat tcaggactct    840
ggaggtcaca ctccgggatt tcagcaagtt gaataagcaa gatatcagat atctggggaa    900
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tcccctcacc atagaagatg agaggcacat cacatctgta acaaacctga aaaccttgag   1080
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tttggaggag gtcccacaac tcgtcaagct tgggttgaaa aactggagac tcacagatac   1620
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gaaagctcag                                                          2950
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<210> 417
<211> 850
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(850)
<223> n = a,t,c or g

<400> 417
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acacgtgtga gagatgcaga aaaaggtccc ttctatgtac accttgccaa atacaagaac   180
ataaagaaag aaaaaagcaa agtttaagcc tttaggtcat ttgtaaaatg ttgccaaacc   240
catgctgcta cttttaacag agaagtctga gttttaaaat tcaaacgttc tttctcttaca   300
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aggtggggac agaaagggag cggcaggctg gggtggctgg taatgtttga tccctctgga   480
tttcccacag gagaaaaggt tctgcaggac gatgagttca cctgtgacct cttccgattc   540
ctgcaactac tctgtgaggg acacaactca ggtttgtgag tccccggaac ttctgatgat   600
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gcatcgttct agagacagca aatcattcta gagcatggct ctgcattggg atctgggncg   720
ttttatnttt ggggtccgcg cacgtccaca atntcaaann nncggcgccc aggggtcccg   780
cccccgaga cgaattagat agatggaagg tgtgaatggt ggtaaagatg acaaagtga    840
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```

<210> 418
<211> 360
<212> DNA
<213> Homo sapiens

<400> 418
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aggcgtccag gtgagtagga catccagaag atttggactt ggagatgttt ccccctattt   180
tgagtgtcca gattaagagc tggctgccct agtcatttta aaacatgctg ggaatccaag   240
ttgggtctcc tcattttaat gatgtctagg ctgaggctg ggcctttcat tcttgagtcc   300
ctgggctcag aagtgggtct ctttccctcc tctcagggta ctgaggaagg accccaggtg   360
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<210> 419
<211> 949  '
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(949)
<223> n = a,t,c or g
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<400> 419
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aattcttata tgtgtatgtt caacagatac tgaatctcag gtgaagcaaa gtgccttcat       120
cattgtagca aatcctacat ttaaatgaaa tcagataagt actggcatat aatcaaaatt       180
tattttttat gttgattccc aatcaatgat ttttttttt caaacaccaa caagacataa       240
agtacttatt atggaatttt gtccatgtgg gagtttatac actgttttag aagaaccttc       300
taatgcctat ggactaccag aatctgaatt cttaattgtt ttgcgagatg tggtgggtgg       360
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```

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<210> 420
<211> 986
<212> DNA
<213> Homo sapiens
```

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<400> 420
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atgggataag atggccaggg aagtcagatg gaaaatcccc aagattcttt ttgctactga       180
tttctataat taaaatatga catatgtaag ggactagtgc atgatattca ataaatgtca       240
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aatgcagttg gttagctgtc tccccatcct cccaactcac tattccaggg aggggctgaa       420
aacagaagtg gctcccctga agtctagtta gcatgtcatg acagagtcca catgaagggc       480
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gaggaatcca tgctggagga ttctcatagg caggcaagaa aaccaccggg tagtcatcat       900
aaggaatccg gctgtccatc tcgggcaagg cccagtgggc agtccacagc gacctcagac       960
tccgctcaca cgaaatcgtc gacccg                                            986
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<210> 421
<211> 1209
<212> DNA
<213> Homo sapiens

<400> 421
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ggcacgagca  ggtctctgcc  cttcatagac  gcataaaggc  tatcgtagag  gtggctgcaa      60
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cgagagagaa  gcttccttgg  acagaatttg  ctgagtcagc  agaggatggg  cccaccacca     180
gattctgtca  gaagctggcg  aagaaccatg  acatggtggt  ggtgtctccc  atcctggaac     240
gagacagcga  gcatggggat  gtttttgtgga atacagccgt  ggtgatctcc  aattccggag     300
cagtcctggg  aaagaccagg  aaaaaccaca  tccccagagt  gggtgatttc  aacgagtcaa     360
cttactacat  ggagggaaac  ctgggccacc  ccgtgttcca  gacgcagttc  ggaaggatcg     420
cggtgaacat  ttgctacggg  cggcaccacc  ccctcaactg  gcttatgtac  agcatcaacg     480
gggctgagat  catcttcaac  ccctcggcca  cgataggagc  actcagcgag  tccctgtggc     540
ccatcgaggc  cagaaacgca  gccattgcca  atcactgctt  cacctgcgcc  atcaatcgag     600
tgggcaccga  gcacttcccg  aacgagttta  cctcgggaga  tggaaagaaa  gctcaccagg     660
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aaaaaaaaa                                                              1209
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<210> 422
<211> 5214
<212> DNA
<213> Homo sapiens

<400> 422
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tataacaatt  ctacaagcca  atcagacagt  acgtgacatt  tcaatgagta  aaaaagagca     180
taaaactgta  tgtgtaagaa  caaaatgtta  aaaggcctac  cacaataata  aaaaaccgtc     240
aattacatca  tcacattaaa  ataagccaga  tgtacaaaag  tctgagacag  agaagacaaa     300
aggacaacac  aagatatttg  ttgaaaaatg  tttgtgctct  ttgggcactt  aattaaacat     360
tgcaaaatca  acatcatctt  cttcttcatc  agactctgca  aaatatttta  cttctttcct     420
agcccgaccg  gttcgtggca  gagaaggtgg  ctcagtaggg  aagtctgagg  ggaagatgtc     480
cacatctgaa  tcctgatcaa  aagatgtctt  cttcggtttc  ttgcttgttg  ttttggatgt     540
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ccctcggcct  ttaccttttg  gtgttgtagt  cttctttgga  atgccaaatt  ctgaatccga     660
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tgtatctgaa  gacggttttc  ccttttttagc agctaccgtt  ttacttggaa  ctttatctgt     780
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tttagctgaa tcatcttctg acttctgaga atatgaagga aatgagaaga gatttccaaa    900
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ttctactgtg tttctgtcca ctacaaatat ttcaccactg actgcatact ggttttgacc   2460
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gccatctagc attcgtctga cattgttcac aatttcccta gcatcatagt tgggtagttt   2580
acaagcccat ccagtaccaa tgccctcagc accatttatt aaaaccatgg gaattatagg   2640
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aacccatata tggttttta cttgaaatgg tttcactgat acaccagctt tgttctttttt   4140
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acctttgta gttgcaatac tatttacaaa gctgatttgc tggaatcctt tttcactcaa   4260
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ccttctagtc atgagggcca caatatcctt gtcaagtttt tccatcttaa atttggacag   4500
atctggttgg aatgttatgc atgtgtaatc ttcaccatca aaatgtttaa ttttggcttc   4560
agaagtcttc atcatattat tcatccatgt ctgcttaaaa ctgtgtttgt attctttgca   4620
agctgtttct actgtaaact ttgtactgaa aatattacaa agttttgcac cataaccatt   4680
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215

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acgaccacct gtaacttttt tctcatcatc atcatagtta ctggatgtta aaagctgtcc    4740
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cccattattc caaatgctta taatgttaga ttcaggatca atagaaactt taatacaagt    4860
catgttctta tccctctgtt tattgtcagc agcattaacc aaaatttcat caaagatctt    4920
gtataaacct ggcacaaagg taacctccct gcaattcatt cctacatctt catcatacac    4980
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gtgttcaagt tgtgtcttct tctgatacac tctctcaaca gacaacttct ttgaagaatc    5100
attttttgttg gcagtttctg actcttcttt ttttgcagca ttgttcaccc aggtcagtgc    5160
cccgttgccg ccgcccacgc cggctcccgc gccgcagcca cccgacttgg ccat          5214
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        <210> 423
        <211> 474
        <212> DNA
        <213> Homo sapiens
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        <400> 423
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acaatgatcc ggtgagtgga agcctaatgg gagaatgaca gccttttcct ggggaaagac     120
attcttctgt gcacaggtca gaccccagag ctaaatcaag tacatcccag cccaaaggcc     180
cctcccaaca ctcatcattg caaggcacat agtagccact gagtacacac ctcatggcct     240
agctaacaca ggtgttactg tcctctaagc ccttacggga ccctagaaga tctcaaaagt     300
agccaccaac tggggcaggg taaggaacca agaagacaca tctcagagac aacaaatcga     360
agtcttcctt taatctccaa aacacaaatt agaagctgcc accacatcta cattccatct     420
ataaaccaag tgatatatct gaaagcaaag gccacaaaca tgaaagcaat ttcc          474
```

```
        <210> 424
        <211> 1453
        <212> DNA
        <213> Homo sapiens
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        <400> 424
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tgaggactgc ttggtcacag gcactgtgaa tgctgggata gttgatctga tcaccaagac     180
ggctactaag tcactagcag ggtgggtggc gtatacagcg tggatgtgct ggaccaaggg     240
atgactcaca tccccggccg gctggagccg gacagcgaga gatttcatca cgctactcag     300
aagggcacac catttgagac ttaaaattct ttatttctgg aattttccat ttaatatttt     360
tgaactgcag ttgactgcag gtaacaaact gtggaaagcg aaaccataga tacgagcggg     420
ctactgcgtt caaaaggctc ttcaactgtt gtggatcctc tgatgttctc ggagatggtt     480
taggtggtta catgccttcc cgcactcctt acattcgtag gatttcgccc cactgtgcgt     540
tttctgatgt tgtgtaagct gatggccgtg actaaagctc ttcccacatt ctgtacaccc     600
atagggtttc accccggtat gaattctctc atgtttcacg aggctcgatc cataaatgaa     660
agccttccca cactccttac atttatacgg ggtttcgcct gtgtggattc tctcgtgctg     720
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gcccgtatgt atcctctcgt gcttaacgag gctcgaaccc cagcgaaagg ccttcccaca     840
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gactcgagta aaggccttcc cacattcttg acattcatag ggtttctcac ctgtgtgaat     960
tctttttatgc tgaatgaggc ttgaaccaca aataaaagcc ttcccacagt ctttacactc    1020
```

```
gtaaggcttc tccccactat gaattctctt gtgctgaata agtttataca cacggctaaa      1080
ggtcttccca cagtctttgc attcgtagtc tttctcccca gtgtggaatc tctggtgctg      1140
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aaaggaattc tcc                                                        1453
```

<210> 425
<211> 1131
<212> DNA
<213> Homo sapiens

<400> 425
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gtttccctca tgattttatt gtctcctggg gaccctgctt tgggcggtct ggatgtctgc       60
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ccctgccccc caagagggaa gccagagcta gcgggccag cactgctcag gaggcaaggt       180
ggcctacctg tcgcacaccc ggaggaggaa atcattgacc aggctctcgt gccggctgca      240
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cgtggagctg ggagcaggtc ctggcaaggc tcttcctgct gtccttgtct aggaaggaga      480
agaggtgcag caggcactcc cggttgagct gggttatgtg catggtgagc agtggccaca      540
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gctacctgtt gactgaggag ccccacgagt tgagaagaac tagcaagagt ggtacaaaac      660
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acccggaacc atggtgcacc accacagcgg cgaggtcata caggcagctc tccgggccac      780
tgttctcagg ctacagaaca aggaagaagg agcagtggtc aatgacatca gtatctcgat      840
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aaaaggccag ttgggtccag cagctttgcc tctctaccct tttatcacca agtatactg       960
ctgagaaaga atcaaatgaa aagaaaaag actcaacaag acctcactca tattaactgg      1020
actctacaag cagtgagcat ccagacctgc atttggttac aaaagaagcc ttcaagctat      1080
tttcatcagc ttcctaatca agttaaaaaa taaaccacaa aactgagaaa a              1131
```

<210> 426
<211> 551
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(551)
<223> n = a,t,c or g

<400> 426
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tggcagaggg tctcttgaga cacagccact gcccctgctt ggtggtcgtg acttgggacg       120
```

217

```
cagcctgcct gtgactggag ctgggggtga cgggtaagat gagtggagat gttgggccag    180
tggggcctga ttcccagact ggaccaaacc ccaggggctg tcctccaatc cggaccatct    240
tccagagctc tccggatgcg cttgtgaaca gcaagttact aggaaacctc tgctgcgtct    300
gcacgtccat caccagggag atgtagccct cgatgaggga gaaggagaag aagcggatgt    360
ggccgcagtc atccccagtg gccatggggt ccttcactcc attggagtag aacatgacat    420
ccatgaggag tgtggcaaca gcaggcagcg tgtcagggtc caggctggtg acacagaacc    480
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<210> 427
<211> 1579
<212> DNA
<213> Homo sapiens

<400> 427
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aagggctct gataggtcac acagtgccac cttgtgtgct ggaccatatc tggagggaga    120
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ttgggactta cggcaggggg ctgaggcttg cagatgggca agtggtgaga ggccccactg    660
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ggcacgctcg cgagtcagaa tgcccccact ttcggatcac tgtcccaaca gacttctggt    780
tttgggaccc agagtagcgg attctctggt tttggatcag gcacaggagg gttcagcttt    840
gggtcaaata actcgtaagt atcccccttt ttgagtctca ccttaattaa aagcattaaa    900
taaggttgga agtgtgtgga tcttgctgga tttgtgcatt ttcttttcgt tttttcctgt    960
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ctgctcctga cttccctgga ggtttctcag aagctgcatg ctaaccctg ggctctgggc   1200
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aaaaagggg gggcccttt                                                1579
```

<210> 428
<211> 413
<212> DNA
<213> Homo sapiens

```
        <400> 428
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gctgcttcct  tcctttccag  aggatgcgga  tcaaacctca  ccaaggccag  tacataggag    120
agatgagctt  cctacagcac  cacaaaggtg  aatgccgacc  acagaaagat  tgagcacgac    180
aagaaaatcc  ctgcgggcct  tgctcagagc  ggagaaagca  tttgcttgga  caagatccga    240
agacgtgtaa  atgttcctgc  aaaaacacag  actcgcgttg  caaggcgagg  ccgcttgagt    300
taaacgaacg  tacttgcaga  tgtgacaagc  cgaggcggtg  agccgggcag  gaggaatgag    360
ccttcctcag  gggttcggga  accaccttct  ctcaccagga  aagactgata  cag          413
```

```
        <210> 429
        <211> 1567
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 429
cccacgcgtc  cgctccaggc  tcctggagtg  cctcatgctg  gctaagttct  ctctgggctc     60
ctccaggggt  tctgtgtgct  cttggaggtc  cctctgctag  tggtggctaa  ctagagagtc    120
agcaggggg   tgactgggaa  agagggagag  gtgatgttgc  ctgctactcc  cctccttgcg    180
gaccctcata  ccacatgacg  tggcggcgtg  gggccaggaa  ctaggaaagg  cagaaggcgg    240
gcgcagtggg  cagctctctg  ggctcagctt  gctgagggg   cctcctgtcc  tggctctttc    300
tgggagacct  cattcttctg  cccatgttcc  tgcctcacac  attccccgtg  atgaacgctg    360
tgggcggggc  ccggcctgtg  ccctcagtcc  cacagctcct  ctagtgtacc  tgccccgtgg    420
gaaccccatg  tggaaagagc  cctcagaact  gacaggaatc  agggacagag  gcccttgctg    480
tcagcctcct  gggcacctgc  acctgccagg  cctctctttc  ttaccagccc  agtgctgctg    540
ccaaaatcca  gggctatccc  agctgcccgg  gaccccagtt  gagccgggat  attttgtctt    600
ctggagatgg  ctggtgggca  ggcctcagtg  gtcatcatag  ggtctgcggg  ggtcctgggg    660
tgcaggtggg  gctcctcagg  gaagagccat  agtctgtccc  caagtcggaa  gggtaatctt    720
catcttctct  cacaggagcc  acaaaccact  gtggtacaca  acgctacaga  tgggatcaag    780
ggctccacag  agagctgcaa  caccaccaca  gaagatgagg  acctcaaagt  gcgaaaacag    840
gagatcatta  agattacaga  acagctgatt  gaagccatca  acaatgggga  ctttgaggcc    900
tacacgaaga  tttgtgatcc  aggcctcact  tcctttgagc  ctgaggccct  tggtaacctc    960
gtggagggga  tggatttcca  taagttttac  tttgagaatc  gtgagtgggt  tcgtgctgct   1020
gatatactcc  tgcctgcccc  tttacccctt  tgtctctgtc  tcctgctcac  cttctcatcc   1080
cagttgccca  cttttccctt  atttgacctt  cgtgctgcac  tcctactctg  tatgcttgtc   1140
cccttgtgcc  ccgatggttg  tagacaggca  cctttgaagg  ccctgctcct  gagctccaag   1200
tgccattcat  tctgcagctg  ctttgtggca  gtgccagtca  ccacaatcaa  gctcacttat   1260
ttcttgccgg  gcgcggtggc  ttacgcctgt  aatcccaaca  ctttgggagg  ctgaggctgg   1320
cggatcacga  ggtcaggaga  tcgaggccat  cctggctaac  acggtgaaac  cccatctcta   1380
ctaaaaatac  aaaaaattag  ccgggcgtgg  tggcggtgcc  tgtagtccca  gctactcggg   1440
tggctgaggc  aggagaatga  tgtgaacctg  ggaggcagag  cttgcagtga  gccaagatca   1500
ggccactgca  ctccagcctg  ggcaacagag  caagactcca  tctcaaaaaa  aaagaaaaaa   1560
ttattta                                                                 1567
```

```
        <210> 430
        <211> 728
        <212> DNA
        <213> Homo sapiens
```

```
      <400>.430
ctttccacac catggtccaa gggaagggct gccctgtctg aagagtcccg cccacttgta    60
ggatgagacg tggaaaatat tgttgctgta acttaaaaaa caagaccagg ggggttggct   120
gggagcaccg gccagcaggc cctgctgagc ataaacccc tccactggag aaggcgtggc   180
ccctgcccac ctggacccttt ctggaaatga gggaagtgct aacagcagtg cccatcccac   240
aagcattaaa ctcgggaggt ggagactctc cagcagaaag ctgggcagca gagtggtcct   300
gcccctcggc ccacaaaggg ccttggccga gcatgggcat gcctggtgtg tgcccactgg   360
ggtccatccc tgccagtggg gttccaggga cctcggggac cgggctgctt gggcccttgg   420
actctaggtg agccgtgaga gcgggctggg gcaggcggag cagctgcctg caggcaggg    480
acacggtcag gggctacctc ccggacaccc tggcctctcc acaggcagct atccatgatg   540
ctgatgctgg cgcagtcaaa cccgcagctg ttcgcgctta tgggcacccg ggcaggcatc   600
gccagggagc tggagcgtgt ggagcagcag tctcggctgg agcagctgag tgcggcagag   660
ctgcagagca ggaaccaggg ccactgggct gactggctac aggcgtacag agcccggctg   720
ggacagga                                                            728
```

```
      <210> 431
      <211> 1524
      <212> DNA
      <213> Homo sapiens
```

```
      <400> 431
gaaatggtac tcttttcatc atggtgatgc atatcaaaga tcttgtgagt gattacaaag    60
aatgatggtt gtagaggaaa cccttacctt ggtaggaagc attactatta agggactgct   120
ttttttttta ggttactgaa aatggagctg acccaaatcc atatgtcaaa acatacctac   180
ttccagataa ccacaaaaca tccaaacgta aaaccaaaat ttcacgaaaa acgaggaatc   240
cgacattcaa tgaaatgctt gtatacagtg gatatagcaa agaaacccta agacagcgag   300
aacttcaact aagtgtactc agtgcagaat ctctgcggga gaattttttc ttgggtggag   360
taaccctgcc tttgaaagat ttcaacttga gcaaagagac ggttaaatgg tatcagctga   420
ctgcggcaac atacttgtaa actagtgaat gtctgagctt tggaagcatg aacagttata   480
aacgtgcatg catacatgca cacacacaca gacacacaca cacacacttg ttaattttgt   540
atagtatttt tatacttgga cagaacttat aaagttaaat atacttgctg catttcaaca   600
catctgttgg accaacagtc acataactaa ccttttttgaa ttttttggaag ccattgctgt   660
tttaaagtca ttatgtagaa tgctacaaac cctaaactta atatatacta attcctgaaa   720
aagactttga gacagtacta tgtcagttca gccacctatt ttgcattgtt ttctataagg   780
aggcaaagca tatgtgtttt cctgttatgc accttttata gcctttacca ctgtgtaatg   840
ttcacaaaca ccaaagtaaa ggaaaaatgc aggatgttac cgtaaaatcc agctgctatt   900
catggagctg aaaaacaaag cacaaataat agatagctaa gttaagaact actaagtagt   960
ttatagaagt agggaaaaac gtaatactgc ttttattca tgtctttaaa gccttttca   1020
gaataagtgc caatcactga tgttgtaaat aatggtgcct taactttata tgcttccctg   1080
gcacttcgtt tctgattttt ttcctgattt gataaataat tagtacatag ttttcactca   1140
cttgcagctt actaaagaca agaaattatg tacatgtact aatgttttc ccacaaaaaa   1200
atcctttact tctgatgtat gaattagtta tctaaatagt taagcctaat acctgaataa   1260
gactcaccaa tgtgattgta caataaattc tatcattcca ttaaaatcct acatttattc   1320
ccaggaatgg taatttcacc tccctacatc tatactccac tccctcagta aataagtgaa   1380
aattgttaac ccatgtgccc attcctgagt agggcagact cttcacaaga ggcccatgac   1440
aagaattcta gggtccagat tgaactttaa tatagacctt tgtctgtgta gaccagtttg   1500
tcttgtaaac tgtcttactt atgt                                         1524
```

```
      <210> 432
      <211> 1908
      <212> DNA
      <213> Homo sapiens
```

```
      <400> 432
gtctctatgg aattatagct cacctacttt tggggggaatc atgtaaggta attttatttc        60
attatgtatt actagaatgt attgttttaa aatgtgtcta ctttttttgaa gtgtcatttt       120
gttgttgttt tcattgagat ggggtcttac tatgttgccc aggctggtct cgaactccga       180
acctcaaatg acctgcccgg ctcggcctcc caaagtgctg ggattatggg catgagtcat       240
tgcatccaga oaaaagtgtc attgtttaat cttgatttga aagaacttta ggtatttaaa       300
acattatgtg gttcttttgt gcaagcgctt tatccctaag tcgtttgatt atccagggtt       360
gaaagcaact ctctctgact tctgcactca gaaagcgctt ggtctaattg tgttctcctt       420
cctgtctctt agcttcacag gataatgcag ctggctgtgg ttgtatcaca agtacttgag       480
aatggttcct cagttttggt ctgtttggag gaaggctggg acatcactgc acaagtgaca       540
tccctggttc agttactcag tgatcccttt tataggacac ttgaaggctt ccagatgttg       600
gttgaaaaag agtggctctc ttttggtcac aaattcagtc agaggagcag cttgaccctc       660
aactgtcagg ggagtggttt tgctccagtc ttcttacagt tcttagactg tgtacaccag       720
gttcacaacc agtatccaac tgagtttgaa ttcaatctct attacttaaa gttcttggct       780
ttccactatg tgtctaatcg cttttaaaaca tttctcctgg attcagacta tgaaagatta       840
gagcacggaa ctttatttga tgataaagga gaaaagcatg ccaaaaaagg agtctgtatt       900
tgggaatgta ttgacagaat gcacaagagg agtcccattt tctttaatta tttatattca       960
ccattggaaa tagaggctct aaagcccaat gtaaacgtct ctagcctcaa gaagtgggat      1020
tactacatag aagagaccct gtccacaggc ccttcctatg actggatgat gctaaccccc      1080
aagcacttcc cctccgaaga ctctgacctg gctggagaag ctgggccacg gagccagagg      1140
agaacagtgt ggccatgcta tgatgatgtc agctgtactc agcctgatgc tctcaccagc      1200
cttttcagtg aaattgaaaa attggagcac aaattgaacc aagcccctga gaagtggcag      1260
cagctgtggg aaagggtaac cgtggacctt aaagaagaac caagaacaga tcgctcccaa      1320
agacacctgt cgagatcccc aggaattgtg tctaccaacc taccttccta tcagaagagg      1380
tctctgctac atctcccaga cagcagcatg ggggaggaac agaattccag catctcccca      1440
tccaatggag tggagcgaag agcagccacg ctctatagcc agtatacatc caagaatgat      1500
gaaaacaggt cctttgaggg aacactttat aaaagagggg ctttgctgaa aggttggaag      1560
ccccgttggt ttgtttttgga tgtaacaaaa catcagctgc gctactatga ctcaggtgag      1620
gacacaagct gtaaaggcca cattgatctg gctgaagtag aaatggtcat cctgctggc      1680
cccagcatgg gagcccccaaa gcacacaagt gacaaggctt tctttgatct caagaccagc      1740
aaacgtgtgt ataacttctg cgcccaggat ggacagagtg cccagcaatg gatggacaag      1800
atccagagtt gtatctctga tgcctgatgc ccatggtcaa cccacgcaga agaaacagaa      1860
gaactcatgc tgccagatag atagaacaag aagcatggat ccttgagg              1908



      <210> 433
      <211> 1714
      <212> DNA
      <213> Homo sapiens



      <400> 433
tttttttttt ttgacaagtt tgcaagtttt attgaattaa tggctggctt tcacagatgt        60
taatcactgg cgggcggttg aatagggggga acaggaaaat gctctccaga ggttcccact       120
gaagcccttt catctgccct gccccaaccc accactgaag ccagaggtca tgggagttgg       180
gatctaacta cactctgtga acttaccacc acccattcca tccccaagcc catatttttat       240
ttgggactag gccactgatg cccgggccct tcctcttcca gtagggtggg agggtgggag       300
gtggggacac ggaccaaccc tcaggaaag aaaagaggtt aaggtggggg gttttgctga       360
atgtctaaga aatgtcagtg gaacagggct ggggcacggt ggctcacgcc tgtaatccca       420
gcactttggg aggccaaggc aggtggatca cctgaggtca ggagttcgag accagcctgg       480
ctaacatggt gaaaccccat ctctactaaa aatacaaaaa ttagccaggc gtggtggcag       540
gtacctgtaa tcccagctac ttgggaggct gagacacagt ctcgctctgt ggcccaggct       600
ggatggagtg cagtggtgca atctcggctc actgcaacct ccgcctcccg ggtttaagca       660
```

221

```
aaattatcct gcctcagcct cctgagtagc tggattacag gcaggcacca ccacgtccgg    720
ctaattttg tatttttagt agagatgggg ttttgccatg ttagccaggc tggtctcgaa    780
ctcctgacct caggtgatcc gcctgccttg gcctcccaaa gtgctgggat tacaggcgag    840
agccaccacg cccagcctct gcttcgtgag ttttctttcc cctgaggcac cctctgagtt    900
ctccacgtgt cagacccatg tccaatgcac cacgctcctt ccttcacacc atgaaagccc    960
cgaagtaaga ccgggtacca tcacgcagtc gaaccaggcg ttcatccagc acacggacga   1020
ccacctcctc cccagcctcc aggtgtacca caccacccag gaagctgctg tcccaccaga   1080
cccgggagct gctggtggcc cgtccgcagg gtgactgctg gctgaccaac agctccagct   1140
cctcggggta gcggggtgtg cgcttgtaga ggccgtgggt gatggtgctg gccaggccca   1200
gcgggcagcc cacaccgccc agctgcacct tggagtagat gtagtagtag ccagctttgg   1260
tgaccacaag ggccccatcg tggtagctga ggcccctcag gaaggccagg cccagctgag   1320
tctcccataa cagcggcccc ccgctgccgg tcaagctgga gttggcccct gtgagatgcg   1380
ctgctgggtt gacctcgtga gaccttcgct cttgtatcag ctgctcccag gagcctgcag   1440
gtccgtcagg caggcgggtg accatctctc ctagacgcca gtgcagctgc aggaggaacc   1500
agccttggac ggccagccca gcccccatca gcaacagcaa gagacccaga cccacccggg   1560
ccacactgca cgactgtctc cggtggcttc gtcccagcct cgtgaatggg atgtcggtct   1620
gtccatccac cacaaacact gagggccgta cgacactctc ctccatgccc aaggtctctg   1680
gagcagggct gacacgcctg ggtccttcaa cctc                               1714
```

```
<210> 434
<211> 478
<212> DNA
<213> Homo sapiens
```

```
<400> 434
tttcgtcaga gatagcagag cgccgagttg gggccacgaa ggcgtgaggg gagtcgtcgt     60
ccctcctgca cgaaagcgtc taagccttgg cgacgccgcc ctggggggacc cacgtcaggc    120
ctgggatagg gaccgctgtc cccgggtccc taccaatgtc gcccgtcgct cccggcccag    180
ctctacccgc agagtctgat ggcagcggcc actctgagga cgccaactca ggtgagtgcg    240
gcgtcttccc gtcctcacac accttccccc acccacgttc taaagccatc agtgaggggc    300
gcctgctcga gtccccgctg cccagggtcg gggacactga ggcgttcgtg ggtggggccc    360
ttttttgac actgcgtgtg acgaggtgtg ggagagcgtg acaggcggag gaaccggcgc    420
gtgcaaaggt tgaggcgcga ctgagccagg agaattcgga aagctgtttt ctgcaggc      478
```

```
<210> 435
<211> 1893
<212> DNA
<213> Homo sapiens
```

```
<400> 435
cagcagcgcg caggtcctca ccatagctct ggtggccacc tctgtcccgc catgctgctc     60
accgacagtg gccagggccc acagcaccaa gaggcttggg ccacaaagta aagggtcgcg    120
gagcctcgcc ggccgccatg tggagctgca gctggttcaa cggcacaggg ctggtggagg    180
agctgcctgc ctgccaggac ctgcagctgg gctgtcact gttgtcgctg ctgggcctgg    240
tggtgggcgt gccagtgggc ctgtgctaca acgccctgct ggtgctggcc aacctacaca    300
gcaaggccag catgaccatg ccggacgtgt actttgtcaa catggcagtg gcaggcctgg    360
tgctcagcgc cctggcccct gtgcacctgc tcggcccccc gagctcccgg tgggcgctgt    420
ggagtgtggg cggcgaagtc cacgtggcac tgcagatccc cttcaatgtg tcctcactgg    480
```

```
tggccatgta ctccaccgcc ctgctgagcc tcgaccacta catcgagcgt gcactgccgc    540
ggacctacat ggccagcgtg tacaacacgc ggcacgtgtg cggcttcgtg tggggtggcg    600
cgctgctgac cagcttctcc tcgctgctct tctacatctg cagccatgtg tccacccgcg    660
cgctagagtg cgccaagatg cagaacgcag aagctgccga cgccacgctg gtgttcatcg    720
gctacgtggt gccagcactg gccaccctct acgcgctggt gctactctcc cgcgtccgca    780
gggaggacac gcccctggac cgggacacgg gccggctgga gccctcggca cacaggctgc    840
tggtggccac cgtgtgcacg cagtttgggc tctggacgcc acactatctg atcctgctgg    900
ggcacacggt catcatctcg cgaggaagc ccgtggatgc acactacctg gggctactgc    960
actttgtgaa ggatttctcc aaactcctgg ccttctccag cagctttgtg acaccacttc   1020
tctaccgcta catgaaccag agcttcccca gcaagctcca acggctgatg aaaaagctgc   1080
cctgcgggga ccggcactgc tccccggacc acatggggggt gcagcaggtg ctggcgtagg   1140
cggcccagcc ctcctgggga cacgtgactc tggtggacgc agagcactta gttaccctgg   1200
acgctcccca catccttcca gaaggagacg agctgctgga agagaagcag gaggggtgtt   1260
tttcttgaag tttccttttt cccacaaatg ccactcttgg gccaaggctg tggtccccgt   1320
ggctggcatc tggcttgagt ctccccgagg cctgtgcgtc tcccaaacac gcagctcaag   1380
gtccacatcc gcaaaagcct cctcgccttc agcctcctca gcattcagtt tgtcaatgaa   1440
gtgatgaaag cttagagcca gtatttatac tttgtggtta aaatacttga ttccccccttg   1500
tttgttttac aaaaacagat gtttcctaga aaaatgacaa atagtaaaat gaacaaaacc   1560
ctacgaaaga atggcaacag ccagggtggc cgggccctgc cagtgggcgg cgtgtgctag   1620
caaggcctgc cgggtgtgcc gcagtcacca cagggttctg agaacatttc acagaagtgc   1680
ctgagacgcg gagacatggc tggtgttaaa tggagctatt caatagcagt gacgcgctct   1740
cctcagccac caaatgtccc tgacaccctc cccagccccc acagataaca tcagctgagg   1800
ttttttttcag tatgaacctg tcctaaatca attcctcaaa gtgtgcacaa aactaaagaa   1860
tataaataaa ccaaagaaag gtgaaaaaaa aaa                                1893
```


        <210> 436
        <211> 1968
        <212> DNA
        <213> Homo sapiens

        <400> 436
```
ccttgcttgc aggaagccat gcagttagtt tctgcagtta gtcgtgtgag gctaggtggt     60
tgggcaggcc tcgggctgta ggtgttgggt gggaaaaaga cccaagggcc tgaaagggag    120
ggaaaggggga gggtagcggg agggtagcag gtgagttcct agggctggaa ggtttaacag    180
cagcctggtg cagtgccctg tcatcaagac aaacccacgg tcctcctggg tgcctaccaa    240
gcttggtttg tacaaaagca aggtgggagt ctatttttgt acatgagata catcacactt    300
acctgtgggc cagtattgtg aagtgagtct gagttgttta cactgatgcc ttccctgccc    360
accacaaatt gtgtacatag tcttcagatg ataccacccc tttccccagc tcccaaccaa    420
gagctggttc taggcctgtg ttatatgtca tatttagcgt ttttatatat gacctttgat    480
ttctgttgtt tgtatttttag cacagtgtat gcaccttcat ttaaatacat ctgtgtgcat    540
acagatacgc atatatgtgt gtgcgtatgc atatatctct catctgtagt ttccaagagt    600
tcagctgaag cagatggagt cctgcagccc aggagacacc ctgcatccct gctaatagtg    660
tttgccacaa gtattagtga gtcttcctta ttaatatttt catttcagaa gactgaagca    720
aagctgatag tgtttgctgt ttctttggca gctaagtgag ggtcttggga tgacttgctg    780
tgttcctcaa gctgcacttt ggggccatct ctgcagtatt agcccccttt ttgcttggtg    840
gtactctgtc tgtgcctgtg tgtgtgtgtg atagtcactc ttgcatggct tccatgtctg    900
gtttgtggca tttggggata aggtgctgaa gccagagcat ttgcagtttg tttgaggcct    960
cgttgccaat gatagatcac tcctgttgac ctggtatgtc tgcttgcttg ctgctttcc   1020
ttgctttctc ttggaagagg aaaggactct ggtcaggccc aggctgagtg agatgagctg   1080
cagctggctc atggccttct tagagcagag agaggagtat gtcattttac taagttccta   1140
aacaaacatt tatgcaggca acactccttg cagatccaga aactgaggca caatagggtt   1200
atgacttgct caagaatatg tagctgctag ggggtaaatc aaggcatcac aatttctgtt   1260
cagcgggcag gaataggctg tgaattgcta gcactttttt ttttttaagca attacttttt   1320
gacttgttcc tctgaaaggg caagaggcgt acacctttcc caaatgtaaa ctaaaatctg   1380
caggatgcca cccactgtat agttctgctt tcccagagag gaagaacttt tagaaaccaa   1440
atgatcttaa ttgttattgc ccacccctgg ctttttccggg tagaaaattc acagtaggaa   1500
```

223

```
tgattgttaa gagagagtgc ttggaaccat gggttaacag gaaaggctac ctaacttcac    1560
atatctgcaa ccagagcagc caccaagcat tacttagcag caggaaaatg attgtatttg    1620
agttcctgtg tgtccaaaac tgaggcacca tgttctttga aaacatgcca cctcaaggct    1680
gggcgcggtg gctcacacct gtaatcccag cactttggga ggccgaggcg ggcggatcac    1740
cggaggtcgg gagtttgaga ccagcctgac caacatggag aaaccccatc tctactaaaa    1800
atacaaaatt agccgggcgt ggtggcatgc gcctataatc tcagctactt gggaggctga    1860
ggcaggagaa ttgcttgaac ccaggaggcg gaggttgcgg tgagttgaga tcgtgccatt    1920
gcactccggc ctgggcaaca acagcaaaac tccgtctcaa aaaaaaaa                  1968
```

<210> 437
<211> 422
<212> DNA
<213> Homo sapiens

<400> 437
```
tttttttttt ttgaggcaga gtctcactct gtcacccagg ctggagtgta gtggcgcaac     60
ctcagcctct ccaagtgctg ggattacagg catgagccac cactcccagc caatagtgaa    120
ttttctaaga gcatgtatcc ctatcagtaa gtaacaggga tacatgaaga tacttataaa    180
atacagaaaa actgcccagc aaatcagggc cctaaacagt tggtagattc cataaattca    240
actggctacc atgtatagcc ctcactgtaa ggtaggtggt taggtttcta gagagcatta    300
gtcttagaat tatgaagagc catattaacc caaatgattt ctaaatttag atatatattt    360
tccctgctac ataaaaactc tgggtaataa ctagaaatag acccacaatt tagagacaat    420
gt                                                                    422
```

<210> 438
<211> 1319
<212> DNA
<213> Homo sapiens

<400> 438
```
aggcagcacg cggaggagcg cggccgccgc aaccccaaga cggggttgac cctggagcgt     60
gtgggccctg aaagcagccc ttacctcctg cggcgccacc agcgccaggg ccaggagggc    120
gagcactacc acagctgcgt gcagctggcc ccgacgcgag gcctggagga gtctgccacg    180
gcccctgag cttgccggtg gcccctcgggt gggcggggtg gcgccgcggc cactgaagca    240
ccgcgcatgg agtggaaagt gaaggtgcgc agcgacggaa cccgctacgt ggccaagcgg    300
cccgtgcgag atcggctgct gaaagcccgt gccctgaaga tccgggagga gcgcagcggt    360
atgacgaccg acgacgacgc ggtgagcgag atgaagatgg ccgctactg gagcaaggag    420
gagcggaagc agcacctgat ccgggcccgt gagcagcgga gcggcgcga gttcatgatg    480
cagagccggc tggagtgcct gcgggagcag cagaatggcg acagcaagcc cgagctcaac    540
atcattgccc tgagccaccg caaaaccatg aagaagcgga acaagaagat cctggacaac    600
tggatcacca tccaggagat gctggcccac ggcgcgcgct ccgccgatgg caagcgggtc    660
tacaaccctc ttctctcagt caccaccgtg tgagctgccc gggcgggtac acggcccagg    720
cccagggaac cccctggggc cccggccctc actctcctat agagattgtg tgtgtgtgtg    780
tgtgcgcgcg cgcgtgctcg ctgtgcgcac gcacacatct cgtctgggtg tgcgcacagg    840
gctttgttag cagagagaag cccctgagga gaaggacgc ttttcttcct tctgcccaag    900
taaagtgacc atgccagtgg ccagcactgg gggcacacct gtgatgggca ccccttcagc    960
tgtgcgtgtg cattccccat cccccatgct cttgcgtgtg cttgcacgtg cacgcacaca    1020
cacacccagt gctctctcca cccgacccgt gtacttgcag acagggaagc tgagctgaaa    1080
```

```
ggagcacaag agagtgtccg gcttcgctgc tgagcgcggc ctctccccgc cgctgcgcac    1140
tgcagttatt tgtagacaaa ggcacccctg attttgtgg  ttttctccc  tttctgtgct    1200
tgccaatagt tgttttgttt tgtggacctg ccctgggggc tggcagctcc ttcaggcagc    1260
ctggcagaag tggaactccc ctctccactg atggctggga agggagttgg ggaggaaga     1319
```

```
<210> 439
<211> 1689
<212> DNA
<213> Homo sapiens
```

```
<400> 439
gagcgatcga ggctgcagcg cggccgccgg gcgcaacatg actgccgtcg gcgtgcaggc    60
ccagaggcct ttgggccaaa ggcagccccg ccggtccttc tttgaatcct tcatccggac    120
cctcatcatc acgtgtgtgg ccctggctgt ggtcctgtcc tcggtctcca tttgtgatgg    180
gcactggctc ctggctgagg accgcctctt cgggctctgg cacttctgca ccaccaccaa    240
ccagagtgtg ccgatctgct tcagagacct gggccaggcc catgtgcccg ggctggccgt    300
gggcatgggc ctggtacgca gcgtgggcgc cttggccgtg gtggccgcca ttttttggcct   360
ggagttcctc atggtgtccc agttgtgcga ggacaaacac tcacagtgca agtgggtcat    420
gggttccatc ctcctcctgg tgtctttcgt cctctcctcc ggcgggctcc tgggttttgt    480
gatcctcctc aggaaccaag tcacactcat cggcttcacc ctaatgtttt ggtgcgaatt    540
cactgcctcc ttcctcctct tcctgaacgc catcagcggc cttcacatca acagcatcac    600
ccatccctgg gaatgaccgt ggaaatttta ggccccctcc agggacatca gattccacaa    660
gaaaatatgg tcaaatgggg acttttccag catgtggcct ctggtggggc tgggttggac    720
aagggccttg aaacggctgc ctgtttgccg ataacttgtg ggtggtcagc cagaaatggc    780
cggggggcct ctgcacctgg tctgcagggc cagaggccag gagggtgcct cagtgccacc    840
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ttcttgaatt ttcttccctg gactggaata cagttggaag cacagggggta actggtacct   960
gagctagctg cacagccaag gatagttcat gcctgtttca ttgacacgtg ctgggatagg    1020
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gtaggtttcc aaaccatttg actcggtttg cctccctgcc cgttgtttaa accttacaaa    1260
ccctggataa ccccatcttc tagcagctgg ctgtcccctc tgggagctct gcctatcaga    1320
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ttgtgagggt tagacagcct cagggcacca ttttaatcc  cagaacacat ttcaaagagc    1500
acgtatctag acctgctgga ctctgcaggg ggtgagggg  aacagcgaga gcttgggtaa    1560
tgattaacac ccatgctggg gatgcatgga ggtgaaggg  gccaggaacc agtgggagatt   1620
tccatccttg ccagcacgtc tgtacttctg ttcattaaag tgctcccttt ctagtcctta    1680
aaaaaaaaa                                                           1689
```

```
<210> 440
<211> 1574
<212> DNA
<213> Homo sapiens
```

```
<400> 440
ccagatcctg cccaacctct atctgggcag tgcccgggat ccgccaatt tggagagcct     60
```

225

```
ggccaaactg ggcatccgct acatcctcaa tgtcacccccaacctcccaa acttcttcga      120
gaagaatggt gactttcact acaagcagat ccccatctcc gaccactgga gccagaacct      180
gtcgcggttc tttccggagg ccattgagtt cattgatgag gccttgtccc agaactgcgg      240
ggtgctcgtc cactgcttgg cggggggtcag ccgttctgtc accgtcactg tggcctacct      300
catgcagaag ctccacctct ctctcaacga tgcctatgac ctggtcaaga ggaagaagtc      360
taacatctcc cccaacttca acttcatggg gcagttgctg gactttgagc gcagcttgcg      420
gctggaggag cgccactcgc aggagcaggg cagtgggggg caggcatctg cggcctccaa      480
cccgcccctcc ttcttcacca ccccccaccag tgatggcgcc ttcgagctgg cccccaccta      540
gggccccgtg gccggcaggc cggcccctgc cccacccccaacccacgggtg tccctgccca      600
ctcgtgtggc aagggagggg agggcaggag ggctcggcct gagcagggtg ctggggggag      660
agcgcaatac ctcacgcggg ctgccgtcct aatcaacgtg cctatggcgg gaccacgctc      720
ggagcctgcc tcttctgcga ctgttacttt ttctttgcgg gatggggggtg ggggttccct      780
ctccaggtgg ttgtccaggc ccaggtcccg gccctgggtg ctcagccagc tcggctaggc      840
cctgcgcctc cctgcgcttc cccttcaggaagggtgtgt gccacctcgt tgcactggat      900
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tccaccaagg gcttgggcct ctcggggctg gggcctccca ggggatgggg acccagaggt     1020
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ggtgggctgt tttgtttttt ttttttcctc ttcccccaaa tgtcttgacg ggatcactgg     1140
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agctgcggag ggggagggga aaaaaaaggc ctcacttttg ctgcctgcgg gccccacac     1260
agccgctgct actttggggg gtgggggaag gggccaaagc tgaagacaca cacagtcatt     1320
catttctgtc caacacccct gtgggtggcg ggtgtgccgt gtgtgtgctt gtgtgtgcgc     1380
acgtgtcggc gctcacacac acatgctagc ccactgatgc acccagccca gggctggcag     1440
tctttgcagc gtggggccgt ctcaccctgg agcctggaga ggatctatgc ttgtttgttt     1500
ttgtaatcca tatcatagtt gctttctttaattgttcctt ctgaataaac agtttatta      1560
agataaaaaa aaaa                                                        1574
```

```
<210> 441
<211> 1102
<212> DNA
<213> Homo sapiens
```

```
<400> 441
ttttttttta aaaaaaatt aagctcttta attatgtgca cacagatttt agaaaaggta       60
gccttttgta tatagatacc tttacattct ttaggctgac tttttaaattg tcatctttt     120
tcaactacag tttttgtata tagtaaacca gaagatgtgt atggaccctg ttatggccaa      180
gcatctcaaa gatgaagaga gaattaatga tagttatatt tcactcaaaa tgccaaaaaa      240
aaaaattcaa caaagtaaaa atttttaaaac ttgactctaa ctagttcctt tttgttttac     300
attctcaaac cattgtcaaa tattctaaat atctctgaga atttctcttt taatgcttca      360
cttgtataat cttaaaatcc tgacagtcat acaatacagc atgtagtagg tacctttct      420
tgaggcacat tcaagtgttt tggcaaacag taaaaagtat ctaaatgcca caggttaaaa      480
tgtcaagttt tactgagtca ccaacttcac ctctttgat ctgcctgttc tccaagaaca      540
tcattctccg gaagatccaa gttcctctag ttgttttctt tgtgttgttt ccagttcttc      600
tagtcttttg cgaagtagag agagttccct ttgatgttgt tcctcctgca tatgaggagg      660
aaatggtagt tccatgcttg gaacccatgg ctgatgactg aaagctaaca ggattgatag      720
atgctgttgg aggcatgtta ggaaccaaaa ttagacttcg aaattcatta tgtcttctct      780
gtatatcttt tagtctttt tgaagccttg tatagtcttc aaaaggaaca ttttgtctat      840
ttaagacctg attttctgtt tccaattctt ctttctttgc ctccaagact tctactttct      900
cttgtagtct ttttcaatttg ttttcatgaa gagattttct ctaaaaagag aaatatgaac      960
aagtatgtta atacataatc tcttatttga acaaaactat atagaaaata ttttactcac     1020
caaaaactgt gtttagatat gaatgttttc agtgaatact agaaacaaag gttagtagac     1080
atggctctta ctgaaaattg ca                                              1102
```

```
        <210> 442
        <211> 1049
        <212> DNA
        <213> Homo sapiens




        <400> 442
ggaaggcctg gtgcaggagc ctctgagctc tttccttctg tgaccacgga cctgtcagtt      60
tccaaacaaa acgcgtgcct cacttgtgtg gattttgtca ctgtgcatgt atgtatgggt     120
ttctggggca ttggtcctgg tgctctctcc acatcctgca tcccgtaccc tctgtctcat     180
ggcccaggca gtgtgaaggc ggagatgctg cacatgtaca gccagaagga cccgctcatc     240
ctctgtgtgc gcctggccgt gctgctcgcg gtgaccctca ctgtgccagt cgtgctgttc     300
cctatccgcc gggccctgca gcagctgctt ttcccaggca aggccttcag ctggccacga     360
catgtggcca tagctctgat cctgcttgtt ttggtcaatg tccttgtcat ctgtgtgcca     420
accatccggg atatctttgg agttatcggg tccacctcag cccccagcct catcttcatc     480
ctccccagca tcttctacct ccgcattgta ccctctgagg tggagccttt cttatcctgg     540
cccaagatcc aggccctgtg ctttggagtc ctgggagtcc tcttcatggc cgtcagtcta     600
ggctttatgt ttgccaactg ggccacaggc cagagccgca tgtctggaca ctgatcaggc     660
cctgctggcc caggtccctg tgcgcatgca catggagggg tcagggccgc tccctagggt     720
ccctcctgcc caacatgtgg aggtggctgg ttcccatgaa cgtggttgtc agaggcgggg     780
gacagcagag gctgcagact ggcccacttc cctcctcccc agggatgcca agcttggatc     840
atggccctaa tcccaacccc aaccccatgg gaggaggagg aggaggaaga agaggaggag     900
gaggaggagg aggaggagga ggaggaggag gccaggtcct ggtggagcct ttgcccagcc     960
cagtcctctc tgcctcctcc tggctgaagc tgtttgtcca ggattaccct cggggctaaa    1020
gaggaaaaat aaagatgttg agctaccaa                                       1049




        <210> 443
        <211> 458
        <212> DNA
        <213> Homo sapiens




        <400> 443
gaattcatga cttaacgtca gttagtattg cttaatggaa tcgacataca tattgttata      60
ccgtgaatca ttttcagtca agaccacatt tctcagagtt tgccaaaaca aaccttctgc     120
cttcgggttg tcaggccact ggaggatgga gctcttacag atccgctgcc gtagcctcaa     180
atactgagaa tgctgtaaca ctggctccag caggataaat ataatcacat ccatgttctc     240
atccattagc ctctgcaaag ccaagtaaaa agctgtttta aagttccagc ttttttgcata     300
ttttttggtt aaaacaaata ctgttttctt gctttggttg atgctctgca tgaggttgtc     360
gatgatggcc aatcccgggt cccaatccct ctcctctaga caaaggagaa cgtttttgtc     420
tcggctctct tcaaggtggt agcgcagctc atttatca                             458




        <210> 444
        <211> 1681
        <212> DNA
        <213> Homo sapiens
```

227

```
      <400> 444
tttttttttt ttgggctaga ggtttgggct ttaatggcag ctggggtaaa aggaaacaaa    60
aacagtaatt ctgaagagca cagggaacag gcagccagga ccagcctggc ccattccagg   120
ccagctgagc tgaaatgctg attctgtcca gggggctgct gtatgtgtag actggtggca   180
gtcttgggga ctgaggcctc ttggagagaa gggaagactg tcggctcaga agtccatgga   240
gctgtgggcc aggtagtcct tgcgaccgat gttgctgacc tgcttggtct gcatagcctc   300
gagtttgggg cagtcagtga tccgatgacc caggcccccg cagaaggcac agccgcgctc   360
tcctccaatg tccagcatgg actcatcccc gcaatgcagc acctgcagca cgggcggcac   420
cttctgcttg gcttctagca gcagcgcttt gaggtccatc agcactgact catcacacgc   .480
tttgttgatg aaggtagtgg cgatgcctgt gtttcccgag cgcccggtgc ggccaatccg   540
gtgtacatag ttctcaatct cctctggcat gtcataattg atgacgtgct ggatggcagg   600
gaagtccagg cccttggagg caacgtctgt ggctactagg acatccttct tgccctcccg   660
gaatgcctcg atggccttag tccgttcctc ctggtctttg cccccatgga tggctacggc   720
ctcaacccccc ttgagcagca ggtactcgtg gatggcgtcc acgtctgcct tcttctctgc   780
aaagatgagt acaggcgggg gtgtcttctg caggcactcg agcaggtaca ccatcttggc   840
ctcctccttc acatattcta cctcctggat gacatccagg ctggcagccc cagcgcgccc   900
cacattgatg gtcacaggct ttacaagggc actcttagca aagttctgaa tcttcttcgg   960
catggtggca ctgaagagca gggtctgtcg ctggcccttg aagtaggaga agatggtacg  1020
gatgtcaccc tcgaagccca tgtcgatcat gcggtcagcc tcgtccaggg ccaggtagcg  1080
acagatgtct aggctgacca tcttcttctg cagcaaatcc atgaggcgcc ccggggtggc  1140
caccatcatg tgtacaccgt gtcggatggt ctccatctgc tctttcacgg acatgccccc  1200
aatgcagagg gcgcagcgca ggagtggtga gctgtcctcc tgcagcaggc ggcagtagta  1260
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gccagataga atggtgggga tgccctggat ctgaatgggt gttgggtggt gaatgccttt  1500
cttcttcagg cctctcagga tggctgcagg aaacttcatt tccttgaagc tcttgatggg  1560
tggtgggata ccgtctccct ccaccaggat gtggtatttc ttccgcacgc gctcatgtcg  1620
ctcttcagac atgctcagaa cataacgggg tggagtccag ctggttttga tggggtcatc  1680
a                                                                  1681
```

```
      <210> 445
      <211> 621
      <212> DNA
      <213> Homo sapiens
```

```
      <400> 445
atcgagacca cccagcccag tgaggacacg aatgccaaca gtcaggacaa cagcatgcaa    60
cctgagacaa gcagccagca gcagctcctg agccccacgc tgtcggatcg aggaggaagt   120
cggcaagatg cagccgacgc agggaaaccc cagaggaaat ttgggcagtg gcgtctgccc   180
tcagccccaa aaccaataag ccattcagtg tcctcagtca acttacggtt tggaggaagg   240
acaaccatga aatctgtcgt gtgcaaaatg aaccccatga ctgacgcggc ttcctgcggt   300
tctgaagtta agaagtggtg gacccggcag ctgactgtgg agagcgacga aagtggggat   360
gaccttctgg atatttaggt ggatgtcaat gtagatgaat ttctagtggt ggaaaccgtt   420
ttctaataat gtccttgatt gtccagtgag caatctgtaa ttgatctata actgaattcc   480
agcttgtcac aagatgttta taaattgatt ttcatcctgc cacagaaagg cataagctgc   540
atgtatgatg ggttactatc aatcattgct caaaaaaatt tttgtataat gacagtactg   600
ataatattag aaatgatacc g                                            621
```

```
      <210> 446
```

228

```
        <211> 468
        <212> DNA
        <213> Homo sapiens




        <400> 446
taacgatcgc ttctctgctt gctacttcac cttgaaactc aaggaagcag ctgttagaca        60
gcgtgaagcc ctaaagaagc ttaccaagaa tatagccact gactcatata tcagtgttaa       120
cttgagagat gtctatgccc ggagtatcat ggagatgctg cgactgaaag gcagagaaag       180
agcaagtact aggagcagcg ggggagatga tttctggttt tgaattaatt ttcaatttat       240
ttacaaaagc tatgtacaat taactaaaat gataaagcag tgatgtggat ttctgtattc       300
tgatgatgag tctcttcaga gtactgctca tcttaattaa ttttttgctga tatattgctt       360
catctactag aatatttcac atcacctata acaactgcac agtgttctga cacatttgag       420
tgtccaaaat agccaattaa cacaaccaaa tacaactggg catgtatt                    468




        <210> 447
        <211> 1030
        <212> DNA
        <213> Homo sapiens




        <400> 447
ctttactgtc ttcattctgg gaataactat tcgaccactg gtggagtttc ttgatgtcaa        60
gaggtccaat aagaaacaac aagctgtcag tgaagaaatc tattgtcggt tgtttgatca       120
tgtgaagact ggaattgaag atgtttgtgg acattggggt cacaactttt ggagagacaa       180
gtttaagaag tttgatgata aatatctgcg gaagcttttg attcgggaaa accaaccaaa       240
gtcaagtatt gtatctttat ataaaaagct tgaaataaaa catgccattg agatggcaga       300
gactgggatg ataagtactg tccctacatt tgcatctcta aatgattgtc gtgaagaaaa       360
aataaggaag gtcacgtcca gtgaaactga tgaaattcga gaactcttat caagaaatct       420
ctatcaaatc cgtcagcgaa ctttatccta caacagacac agtctgacag ccgacacaag       480
tgagagacaa gccaaggaga ttctgattcg ccggcgacac agtttgcgag aaagcattag       540
gaaggacagc agcttgaatc gagaacacag ggcttccact tcaacctccc gatatttatc       600
cttacctaaa aatacgaagc ttccagaaaa gctacaaaag aggaggacta tttctattgc       660
agatggcaat agcagcgact cagacgcaga tgccgggacc accgtgctca atttgcagcc       720
cagagccagg cgcttcttgc cagaacagtt ctccaagaaa tcccccccagt cctataaaat       780
ggaatggaag aatgaggtag atgttgattc tggccgagat atgcccagca ccccccccaac       840
accccacagc agagaaaagg gcacccagac gtcaggctta ctacagcagc cccttctctc       900
taaagaccag tctggctcag agagggaaga cagtttgact gaaggcatcc cgcccaagcc       960
gccaccacgg ctggtctgga gggcatcgga acctggaagc cggaaagccc gatttgggag      1020
tgagaagcct                                                            1030




        <210> 448
        <211> 1936
        <212> DNA
        <213> Homo sapiens
```

229

<400> 448

```
ggcacgagga ggcctcgggg ctgtccgtgt ggatggggaa gcagatggag cccttgcacg        60
cagtgccccc ggcagccatc accttgatct tgtccttgct cgttgccgtg ttcactgagt       120
gcacaagcaa cgtggccacc accaccttgt tcctgcccat ctttgcctcc atgtctcgct       180
ccatcggcct caatccgctg tacatcatgc tgccctgtac cctgagtgcc tcctttgcct       240
tcatgttgcc tgtggccacc cctccaaatg ccatcgtgtt cacctatggg cacctcaagg       300
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tggctgtcaa cacctgggga cgggccatat ttgacttgga tcatttccct gactgggcta       420
atgtgacaca tattgagact taggaagagc cacaagacca cacacacagc ccttaccctc       480
ctcaggacta ccgaaccttc tggcacacct tgtacagagt tttggggttc acaccccaaa       540
atgacccaac gatgtccaca caccaccaaa acccagccaa tgggccacct cttcctccaa       600
gcccagatgc agagatggtc atgggcagct ggagggtagg ctcagaaatg aagggaaccc       660
ctcagtgggc tgctggaccc atctttccca agccttgcca ttatctctgt gagggaggcc       720
aggtagccga gggatcagga tgcaggctgc tgtacccgct ctgcctcaag catcccccac       780
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ggttgagagc taagacaacc acctaccagt gcccatgtcc cttccagctc accttgagca       900
gcctcagatc atctctgtca ctctggaagg gacacccccag ccagggacgg aatgcctggt       960
cttgagcaac ctcccactgc tggagtgcga gtgggaatca gagcctcctg aagcctctgg      1020
gaactcctcc tgtggccacc accaaaggat gaggaatctg agttgccaac ttcaggacga      1080
cacctggctt gccacccaca gtgcaccaca ggccaaccta cgcccttcat cacttggttc      1140
tgttttaatc gactggcccc ctgtcccacc tctccagtga gcctccttca actccttggt      1200
cccctgttgt ctgggtcaac atttgccgag acgccttggc tggcaccctc tggggtcccc      1260
ctttctccc aggcaggtca tcttttctgg gagatgcttc ccctgccatc cccaaatagc      1320
taggatcaca ctccaagtat gggcagtgat ggcgctctgg ggaccacagt gggctatcta      1380
ggtcctccct cacctgaggc ccagagtgga cacagctgtt aatttccact ggctatgcca      1440
cttcagagtc tttcatgcca gcgtttgagc tcctctgggt aaaatcttcc ctttgttgac      1500
tggccttcac agccatggct ggtgacaaca gaggatcgtt gagattgagc agcgcttggt      1560
gatctctcag caaacaaccc ctgcccgtgg gccaatctac ttgaagttac tcggacaaag      1620
accccaaagt ggggcaacaa ctccagagag gctgtgggaa tcttcagaac·ccccctgtaa      1680
gagacagaca tgagagacaa gcatcttctt tcccccgcaa gtccatttta tttccttctt      1740
gtgctgctct ggaagacagg cagtagcaaa gagatgagct cctggatggc attttccagg      1800
gcaggagaaa gtatgagagc ctcaggaaac cccatcaagg accgagtatg tgtctggttc      1860
cttgggtggg acgattcctg accacactgt ccagctcttg ctctcattaa atgctctgtc      1920
tcccgcggaa agctcc                                                      1936
```

<210> 449
<211> 354
<212> DNA
<213> Homo sapiens

<400> 449

```
ggcacgagct ggaaaacaat tggcttcaac atgagaaagc tcctacagaa gaagggaaaa        60
aagagctgct ggccctaagt·aacgcgaacc cctcgctgct ggagcggcac tgtgcctacc       120
tctaagccaa gatcactgaa tgagcggacg actgaggaca tatgctttaa gctcgaccca       180
ttcccatagc gacgctcatc actctgcttg catgctcttc aaccctcagc tgtcggctct       240
cgagctaccc cctcaatgtc atgcggcctc cttcccatcc gcccttcctc gccgctgctc       300
agtactccgc gttaggagac cttcgtactt agcggcccgc tccagagtac cgcc            354
```

<210> 450
<211> 1073
<212> DNA
<213> Homo sapiens

```
        <400> 450
ggaaacatca tctacatgta catgcagcca ggagccaggt cttcccagga ccagggcaag    60
ttcctcacgc tcttctacaa cattgtcacc ccctcctca atcctctcat ctacaccctc   120
agaaacagag aggtgaaggg ggcactggga aggttgcttc tggggaagag agagctagga   180
aaggagtaaa ggcatctcca cctgacttca cctccatcca gggccactgg cagcatctgg   240
aacggctgaa ttccagctga tattagccca cgactcccaa cttgcctttt tctggacttt   300
tgtgaggctg tttcagttct gacattatgt gtttttgttg ttgctcttaa aattgagacg   360
gggtctcact ctgtcaccta gggtggagtg cagtggtgcc accatagctc cttcgactat   420
tgggcttaag cgatcctccc ccacctcagc cttccaagta actgggacta caggtgtgca   480
tcactggcag tgggaattgt ggcttttctg tcttctatgg agacggggtc ttgcctgtgt   540
tgccccaggc tggtcccaaa ccccctggcc tcatgtgatc ctcctgccat ggcctcctaa   600
agttctggga ttacaagtgt gagtcactgt gactggccaa cattatgtga tttatgtgtg   660
aacctatata acacaaatca tcccccaaaa ccccatcctg gatctgtaaa gcagctgcca   720
aagaatgaag tgagagaaac agttgtaaag atgagtttcc caccctactt atacccagag   780
tgcctaagag gaaatcaact cttcctcaat cagagctttg cctttgtttg ttgttgtttg   840
cctttaaagt ctaacacacc tgacatgttt cagtcagaat gaccccaaat gcatcactgt   900
tctccacgtg gtcccaagtg cctctctgtt tagggccatc aaatcatgga atgcagcaca   960
gtttgatatt ttctatattc ccaattccta cccaaacctt ttcatgaaat cgtagagttt  1020
gttttaccct ttatctggtg taagattctg cataaaccaa gaagtgaacc tgt         1073
```

```
        <210> 451
        <211> 2674
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 451
gcgcattgac ccctagaaca gcgctcgaat tgccgcgtcg acccacgcgt gcgaacccac    60
acaatggcca gcgataccag cagcctggtg cagtcccata cttacaagaa gcgagagccg   120
gccgacgtgc cctatcagac tgggcagctc caccccgcca tccgggtggc agacctcctt   180
cagcacatca cacagatgaa gtgtgcggag ggctacggct tcaaggagga atacgagagc   240
ttctttgaag ggcagtctgc accatgggac tcggctaaga aagatgagaa cagaatgaag   300
aacagatacg ggaatatcat tgcatacgat cattcccgag tgaggctgca gacaatagaa   360
ggagacacaa actcagacta tatcaatggc aattatatcg atggttatca tcgacccaat   420
cattacattg ctacccaagg gccaatgcag gaaaccatct atgacttctg gaggatggtg   480
tggcacgaaa acactgcaag tatcatcatg gtgaccaatc ttgtggaagt gggaagggtc   540
aaatgctgca atactggcc agatgacaca gagatatata aagacattaa agttacccta   600
atagaaacag aactactggc agaatatgtg ataagaacat ttgctgttga aaagagaggt   660
gtgcatgaaa tccgagagat cagacagttt cacttcactg ctggccgga tcatggggtc   720
ccctaccatg ccaccggcct gctgggattc gtgcggcaag tcaagtccaa gagcccgccc   780
agtgcaggcc cactggtggt gcactgcagt gctggtgcag ggaggactgg ctgtttcatc   840
gtcattgata tcatgttgga catggccgaa agggaagggg tcgtagacat ctacaactgc   900
gtcagggagc tgcggtcacg gagggtgaac atggtgcaaa cagaggagca gtatgtgttt   960
atccacgatg cgatcctgga agcctgtctt tgtggggaca cctctgtgcc tgcttccaa   1020
gttaggtctc tgtattatga catgaacaaa ctggatccac agacaaactc aagccagatt  1080
aaagaggaat tccggacgct aaacatggtg acaccaacgc tgcgagtaga ggactgcagc  1140
atcgcactgt tgccccggaa ccatgagaaa aaccggtgca tggacatcct gcccccagac  1200
cgctgcctgc ccttcctcat caccatcgat ggggagagca gcaactacat caatgctgcc  1260
ctcatggaca gctataaaca gccttcagct tttatagtca cccagcatcc tttgccaaac  1320
acagtgaaag acttttggag actggtcctg gattatcact gcacatccgt agttatgcta  1380
aatgatgtgg atcctgccca gttgtgtcca cagtactggc cagaaaacgg agtacacaga  1440
cacggcccca tccaggtgga atttgtctct gctgacctgg aagaggacat catcagcagg  1500
```

                                231

```
atattccgca tttacaatgc cgccagaccc caagatggat atcggatggt gcagcaattc   1560
cagttcctgg gctggccgat gtacagggac acaccagtgt ctaagcgctc cttcttgaag   1620
ctcattcgcc aggtggacaa gtggcaagag gaatacaatg gcggggaagg ccgcaccgtt   1680
gtgcactgct tgaacggggg aggccgcagt gggacgttct gcgccatcag catcgtatgt   1740
gagatgctcc ggcaccagag aaccgtggat gtctttcacg ctgtgaagac actgaggaac   1800
aacaagccca acatggtcga cctcctggat cagtacaagt tctgctacga ggtggccctg   1860
gaatacttga attctggctg atggtgtaaa cagctctgca aacaatccct ttcataccac   1920
aaagccaaga cgttccatgg tatttgtgca aaagagatga agacttctca atatgcttat   1980
tttgctttgc ataattggct cttttaaga gcccaagaaa gtgtttctaa aattgcttgc   2040
actgcccaat cccagtaatg ctgctgcctg acagaaacac acacacagcc acagttgcca   2100
aatcccgtac tccttgccac cggcttccta gagcagcgta gacagctggt aaactgaaga   2160
gcacaactat attcttatga aggaatttgt acctttgggg tattattttg tggcccgtga   2220
ccctcgttat tgttacagct gagtgtatgt ttttgttctg tggagaatgc tatctggcat   2280
tatggtaata tattatttta ggtaatattt gtactttaac atgttgcata atatatgctt   2340
atgtagcttt ccaggactaa cagataaatg tgtaatgaac aaagatatgt tgtatgagtc   2400
gtcgtttctg tcagatttgt attgtttcca agggaaaagc ttgggggagg actcagttca   2460
caaaatgcaa aactcaacga tcagattcac ggacccagag ctttttccatg tgtttatatt   2520
gtaaatattt ttgatttcat cgaaattatt tattcattaa aagaaatttt tgtgaagcac   2580
agtgagtgac aatcattttt cttaaggcct ggaaacgatt ttctgtatga tgttactttа   2640
tgtgaattct catctcaata aatgatgacc cgtg·                                2674
```

```
<210> 452
<211> 601
<212> DNA
<213> Homo sapiens
```

```
<400> 452
ttttttttt tttcagcggg aaaaatgtgg atttaatgga atgaaggatg aaagggcccg    60
aagccagcaa gtctcgcccc acctaccagc ccccacccag cttcccaagg gtctcagagg   120
gacactcttg gcactggcct ttcacatctg ttcaacaacc cctgagctga aaagttgcag   180
tgggaggcct ccagctcagc aggtggactc caaaataccc ctcttgtctt atccactcca   240
ggtcggggc agggaagcac atggggctgc ttctgccacg ttccctccac agccatcccc   300
aaggccaggc acacaggcac catccaaggg cctgcccct agcagtgaga ctctagctct   360
gtgagtctga gcagtgaggt cctggggtg gcgggagccg agggtcctgc tgggttccgc   420
tggggcaggt cctcggctgg gcacatgagc tgacggattc tctctctgaa ggggcccttg   480
agggttccga gtctgtagag gctccaggca ggaatgcaga ccatggagga cagagccagg   540
agccagccca gggcatcgcc ccaccacggg tacgtgtact tcttgttgta ggtcagcgga   600
g                                                                    601
```

```
<210> 453
<211> 474
<212> DNA
<213> Homo sapiens
```

```
<400> 453
cgacccacgc gtgcgggatc ctatcgaaaa ggattggtgc gactgggcca tgattagcag    60
gtaggggcag tgatggaggg tggctcaggc caggggtgg acctgctcat tgcaggtaga   120
ccctgagtga gagtggggca ctcttctccc tgggtccacc ccctctctca ctcaagtcct   180
```

232

```
cttctgcccc taggccttat agcaccctgc gagattgcct ggagcacttt gcagagttgt    240
ttgacctggg cttccccaat cccttggcag agaggatcat ctttgagact caccagatcc    300
actttgccaa ctgctccctg gggcagccca ccttctctga ccccccagag gatgtactcc    360
tggccatgat catagccccc atctgcctca tccccttcct catcactctt gtagtatgga    420
ggagtaaaga cagtgaggcc caggcctaag gggccacgag cttctcacaa ccat          474
```

```
        <210> 454
        <211> 1838
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 454
tttttttttt ttatatttaa aaattaattt aatgcttggc taaatcttaa ttacatatat    60
aattatcaaa cgatagtcct taatttccaa aaaaattcct cttttgaaaa tccagaatca    120
gaaagcataa acttttaaac caagttcccc tgaatattta caatgtggta taaacattat    180
agaagaccat ggatattaaa ttgcctgggg tgtggctaat cagcaaggcg tattctttat    240
tgcatattta actcacatat gtgggatttt aaatatgaca gactactaaa attcaaatgc    300
atgtatctgc aagctgggca gggagtaaaa tcatgaatga gacaggacgg tcagcccaaa    360
accatgcaat taggttgtgg gtttattatt ttcaaaagtg aaatttctat gttccatttg    420
aaactatgtt gcatattcat ttagcattca cattaaaccc acatttgact ctaacgctga    480
ttcaaggaag aaagttcaac attcactcaa tgactaagtc cacaactcaa ctctcaatgt    540
taaggcagca cagctacagt gatagcaacg ctaaccaaaa ggtaatgaac atttagtcac    600
ttgccagccc ttttgttaca acagtgtagt aatttcccta agacaatttg ctaccggata    660
attttctgct gttaaaaggc ttcctctgtg gaaaaacacc acaaatttcc agtgtgaaag    720
taagtccatg gtggtataaa tatatatatg cataattaca caatttacac tgcacacatc    780
gtttacaggg gacaattaac tgagagggtt aatttaaatg accatacaaa atacttcagt    840
aaacaaagta tgacaggcag taaagaaaac attcatagac tcctagaaat aatctgaatt    900
cctttcattc tgaagaaata tcatttaagg acacagtatt gaatataatg ttttttgtat    960
taaaacaaga attgctattt tacagtttaa gaaactttac atatatacaa aatttacaca    1020
ttgggaatgg taatcaagca aataggtttt tcagtctcat agatctattt ccttcgatc     1080
aaagacttaa attctttcac attgtggtca cttgcaacag acatagcatg atccaaagct    1140
cgaacacttg caaggagttt tactatctgt tttatgtttt cccttgcatt tcttttttcc    1200
acatcagaac acccgatact atttctataa attgtatccg ctaagtgtac aaggtatcgg    1260
caaaagtttt ctaactgaga aatagtcctt tctcctttca gattcatgaa ccattgtttg    1320
gggaaacaat tgattacatt ttgggctttt ttgatgctgt catctccata ttctgaattc    1380
tgaaagcca tgagaatata tcgatttaat aaaccatcta ttgataactc ttgcagagtt     1440
ttatttgaga aaatgccata ccactgaaga aaattgccta acagcttaac tgaagaccaa    1500
aactgtcgtt gaaaaaacaa gtaaggccca gaatttttat tttctaagac attttttggga   1560
tataagggca taaatacatc atcatctaaa gttcttctca ttctcaataa aagtgccttt    1620
aggtatacct gtgtattttt attttctgca ttcactactg aaggatatcc attgattaat    1680
tttagtgtaa ttcccaccat tcttgaagtc tgtgttgtag aaaaagggtc ccacatattt    1740
tcagctatca ctgttagttt aggaagaatc accttttcca caatggtagg tagtagggca    1800
acatctacat catcttttc ttgctctcgt tcttcaca                             1838
```

```
        <210> 455
        <211> 1790
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 455
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gccaatttcc tacaggtgct ttcaggatca ggtcactgcg atggtctcta aacaccattc     120
tgctttctct gctctcttgt ctttaggagc cgggtgtggg ctgagccctg cctgattgat     180
gctgccaagg aggagtacaa cggggtgata gaagaatttt tggcaacagg agagaagctt     240
tttggacctt atgtttgggg aaggtatgac ttgctcttca tgccaccgtc ctttccattt     300
ggaggaatgg agaacccttg tctgaccttt gtcacccct gcctgctagc tggggaccgc     360
tccttggcag atgtcatcat ccatgagatc tcccacagtt ggtttgggaa cctggtcacc     420
aacgccaact ggggtgaatt ctggctcaat gaaggtttca ccatgtacgc ccagaggagg     480
atctccacca tcctctttgg cgctgcgtac acctgcttgg aggctgcaac ggggcgggct     540
ctgctgcgtc aacacatgga catcactgga gaggaaaacc cactcaacaa gctccgcgtg     600
aagattgaac caggcgttga cccggacgac acctataatg agaccccta cgagaaaggt     660
ttctgctttg tctcatacct ggcccacttg gtgggtgatc aggatcagtt tgacagtttt     720
ctcaaggcct atgtgcatga attcaaattc cgaagcatct tagccgatga ctttctggac     780
ttctacttgg aatatttccc tgagcttaag aaaaagagag tggatatcat tccaggtttt     840
gagtttgatc gatggctgaa. tacccccggc tggcccccgt acctccctga tctctcccct     900
ggggactcac tcatgaagcc tgctgaagag ctagcccaac tgtgggcagc cgaggagctg     960
gacatgaagg ccattgaagc cgtggccatc tctccctgga agacctacca gctggtctac    1020
ttcctggata agatcctcca gaaatcccct ctccctcctg ggaatgtgaa aaaacttgga    1080
gacacatacc caagtatctc aaatgcccgg aatgcagagc tccggctgcg atggggccaa    1140
atcgtcctta agaacgacca ccaggaagat ttctggaaag tgaaggagtt cctgcataac    1200
caggggaagc agaagtatac acttccgctg taccacgcaa tgatgggtgg cagtgaggtg    1260
gcccagaccc tcgccaagga' gactttgca tccaccgcct cccagctcca cagcaatgtt    1320
gtcaactatg tccagcagat cgtggcaccc aagggcagtt agaggctcgt gtgcatggcc    1380
cctgcctctt caggctctcc aggctttcag aataattgtt tgttcccaaa ttcctgttcc    1440
ctgatcaact tcctggagtt tatatcccct caggataatc tattctctag cttaggtatc    1500
tgtgactctt gggcctctgc tctggtggga acttacttct ctatagccca ctgagccccg    1560
agacagagaa cctgcccaca gctctccccg ctacaggctg caggcactgc agggcagcgg    1620
gtattctcct ccccacctaa gtctctggga agaagtggag aggactgatg ctcttctttt    1680
ttctctttct gtcctttttc ttgctgattt tatgcaaagg gctggcattc tgattgttct    1740
tttttcaggt ttaatcctta ttttaataaa gttttcaagc aaaaaaaaaa              1790
```

```
        <400> 456·
tgcgcaagcg ggagttccgg ctggagaccc gtgctctggg ccggcgcctt caccatggcc      60
tcggcagagc tggactacac catcgagatc ccggatcagc cctgctggag ccagaagaac     120
agccccagcc caggtgggaa ggaggcagaa actcggcagc ctgtggtgat tctcttgggc     180
tggggtggct gcaaggacaa gaaccttgcc aagtacagtg ccatctacca caaagggggc     240
tgcatcgtaa tccgatacac agccccgtgg cacatggtct tcttctccga gtcactgggt     300
atcccttcac ttcgtgtttt ggcccagaag ctgctcgagc tgctctttga ttatgagatt     360
gagaaggagc ccctgctctt ccatgtcttc agcaacggtg gcgtcatgct gtaccgctac     420
gtgctggagc tcctgcagac ccgtcgcttc tgccgcctgc gtgtggtggg caccatcttt     480
gacagcgctc ctggtgacag caacctggta ggggctctgc gggccctggc agccatcctg     540
gagcgccggg ccgccatgct gcgcctgttg ctgctggtgg cctttgccct ggtggtcgtc     600
ctgttccacg tcctgcttgc tcccatcaca gccctcttcc acacccactt ctatgacagg     660
ctacaggacg cgggctctcg ctggcccgag ctctacctct actcgagggc tgácgaagta     720
```

```
gtcctggcca gagacataga acgcatggtg gaggcacgcc tggcacgccg ggtcctggcg    780
cgttctgtgg atttcgtgtc atctgcacac gtcagccacc tccgtgacta ccctacttac    840
tacacaagcc tctgtgtcga cttcatgcgc aaactgggtc cgctgctgaa ggccattgct    900
ccatctcacc tctgctccca gaaaataaat gccctgaaac cctccccca naacctgcaa    960
tctgtcgggc actcttctcg ttcaactccc tgtagccctt gggactttg cggtccccta   1020
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cacagaatcc taaggggcag gagtgcctgg gcatgtgtct gtgggagcct tgcagtcagt   1140
tgtgtttgga caagtgcaac agtcaggctg ctgattcctg tggcatgcag ctgtagagg    1200
ttgacaaatg gagggggggtg ttgagggtga gccctagttg attttttaaa atttaaactc   1260
tggtaagaac atttaatatg aaaaaaaaaa aaa                                 1293
```


        <210> 457
        <211> 1155
        <212> DNA
        <213> Homo sapiens

        <400> 457

```
cccacgcgtc cgggacagac tcccatccac tggggtcagg gaccggaaag gcgacaaacc     60
ctggaaggag tcaggtggca gcgtggaggc ccccaggatg gggttcaccc acccgccggg    120
ccacctctct gggtgccaga gcagcctggc cagtggtgag acggggacag gctctgctga    180
cccgccaggg ggaccccgcc ccgggctgac ccgaagggcc ccggtaaaag acacacctgg    240
acgagccccc gctgctgacg cagctccagc aggcccctcc agctgcctgg gctgaggtgt    300
ctggtgcctg aacagactt ccctgtggag gattcctgcc agaccctgcc cggctcctcc    360
ctgaccggtc cttgtgccct caccagacac cctgttggcc atgactcaac aaaccagtgt    420
tgggagccgt ctgcctcccc agctcagtgc ctttctgcac cccttctctc ctggggagct    480
gtctgcatcc gccacccccct ccaaccactg ccctcagccc ccgaccttat ttattaccct    540
cccctcccac accccccaatc tacctggtga tgattttaag tttgcgcgtg tcttgggttg    600
ggctgggggg tttcccacat gcagtgtcag aggggccgcc cggtgggggct atctccgttg    660
ctatattaat ggcaagacta aatgaaacct agggcacggc ctccgaagct gcgtgtggcc    720
ccttagaggt gagcatcaga gccagagcag tgaggggagg actcacccac cctctccctc    780
tcccttcagc tctgggaggc aggcgcagtg cccccctccc gtgggctggc ccaggaccgc    840
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agtctcgctt tgttgcccag gctggggtgc agtggcacga tcgcggctca ctgcaacctc    960
cacctcccgg gctcaagcga ttctctcacc tcagcctcct gagtaggtgg gattacagat   1020
gcccgccacc acacccagtt aattttgta ttttagaag agatggggtt tctccatgtt   1080
ggccaggctg gtcttgaact cctggtctca agtgatccgc ccgcctcggc ctcccaaagt   1140
gctgggatta caggg                                                    1155
```


        <210> 458
        <211> 1297
        <212> DNA
        <213> Homo sapiens

        <400> 458

```
ggcaccaatc caatgtcagt atctgcaggc tgaagtacag acagttacac tgaaattgcg     60
tatgctctga ggaatgacac taaattcgct tccaggaaaa ttactcaatt ttgtaagtaa    120
ttttcagttt ttttctcag ggatatttt caactttcac tttaattttc tttagttgct    180
tagttgtaca ttttgagaag gcaaatccat tggaacttgg ggaggcttag aacataaatc    240
```

235

```
agtattagaa gtaaagggaa cacacagcta aaagttttac tttaatcaca aattcacaac      300
tagagatatc atttgcatat cttagaacgc taaagacctg ttaaaatttt ttaaccaatc      360
agcaaaaata tgtgccccac agatttctaa tgttcataat ttagaattta tcacatataa      420
tatttattaa tagtttattt gcaaaattat tattcttaaa acacttcttt ccaacacatt      480
tacaatgttc atgtgtttta aagaaaaaaa ccaccctcat ttaaaatgt actactgact       540
ttaatgtgtg gttataccag tgccaccaaa ttagaaaaga aaaagaaaca tacagctgta      600
ttggatatgt agttactact acaaataatg acaacacacg tcctatacaa agatcatatt      660
cacgcttttc taccacttct cagtcattgt cagaaccatt tggaggtaag aaaaccaatg      720
catcattgaa aatatggccc aaatgcccta aggcggtata ccccatacat catcacatgc      780
atctgatttg gagtcagtcc attaaaagta acagccatat ctgaacaaca gccttctact      840
acctggttgg ggtgataagt cattgcctct ttaatagaaa gcccaacaga tttggtatta      900
aatacatctt ttccatcagc atcttctgca ttttctgcaa atactccagc atatttcagg      960
caaactgcta gctgtttatc ttcagatatc ttccaaatca tccctccctg ttcaggacac     1020
ttttctggga tattgagaag gctgttaagt cttttcattg attctacact taagacaatt     1080
cctccttcca tacccacata ttcaaggtct ccagatttta tagtgtggcc tagatagaaa     1140
ggctgtgatg gatccttttt taacaaaaaa tactttaggt tttcaatgat agcaaacgta     1200
gtggggcgtg caaggaagaa ccagttgtat tggtctctat acttacaaat acgcctttga     1260
taagtataga gaccaataca actggttctt ccttgca                              1297
```

<210> 459
<211> 777
<212> DNA
<213> Homo sapiens

<400> 459
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tttccagggc aaggccagcg agacagagcc cattgctcag gacgcagccc agattgcaaa      120
gagaggacag cccatggtag cggaagaaat tctggcggag agcactgtac ttggggtcct      180
tctctcgcag ctggcggtag ggatcgggac cctggtggct gcctggtacc tccccaccca      240
ggcctcgctc cttctccacg gtttgcaggg cccacatggc agctgtggtg cggggttcca      300
gccagcgggc gttgacagtg gccagcgtaa ggctcaggaa cagcaggtaa agctggctgg      360
cctcccagaa tgtgagctga gcccaagcat gctgtgaagc caagatgcag aggttgatga      420
aggcacagcc catggagatg tggaagtaga aggggaagag tttgctctgc actagtccga      480
aggtatgtcg gggaaggctt cggaaaagca ggaagcctga gacgaaggtc acccacattt      540
gcatgcccca ggcacctgac aagaccagta gatggaccat cttaatcagg cctcctaggt      600
tcccgccttc ctccatcttg cagtccgtta ggaaccggga cctcaatccg cagcacccgg      660
attccgagaa cagaggcgtc ggggccaaat gggctgaatc tggtacctca ctcccacgcc      720
cccgggtgga cagcgaccct cctcggccgc gtcccctcgt gggtttcccc tcgtgcc       777
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<210> 460
<211> 859
<212> DNA
<213> Homo sapiens

<400> 460
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cctgtggaag aagagcagga tggagagcat ggtctggtcg atgttgcggt tgcagatgcc       60
ctcgttgatc aggtagcagg ggtcccgcag caccggctct agcgaatcct gccgcattat      120
gctgttgagc ttgtcggtat tgaggttctc aaagaccagc ttttcctgca ctgccgaaa       180
```

236

```
gttgctcact gtagggctgc ccgggttgtt gttctccccg ctgctgcctc gctggagccc    240
actccgatgg gccaggtcca ggcagcagtt gcagcagtcg aggccgacag gtgagcggca    300
atcgagcttg gactgggcca tcttctcagg ctcggaggtc gcctggcctg cgaggtcagg    360
ggcggctggc aggtgcgcgc ccaccgagct ggcctgaggg gactccaggg tgcctggaaa    420
agacaagctg tgaggaaaag agttggaaat tagcgcctaa agccagccac cttcggctcg    480
gccccttct ggctgtactg ctccgggtgc gaatagaaac agctggacaa acagctccga     540
gcggatcctt cgggctcact tcctcctctt cctccttctc ctcccctcc tcttgaggcc      600
ggggccgcc ccctgaggt gccacacgcg ccccagcgc agtcccaagt ttcccaagtg       660
tgagcgggga ttggggcgga cctgtggagg caggaagggc gggcagcagg gcagagggag    720
agccagggcg cgcccttgct ccctccctcc tttgctccct ccctccccgg tttgcaggct    780
ctcaggctct cgggctcccc tgggctgtga cggctgagcg gtggcaggag ctgagagcga    840
gtgagctacg aaatcgtcg                                                  859
```


        <210> 461
        <211> 1975
        <212> DNA
        <213> Homo sapiens

        <400> 461
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agaaatcagc tttcttcaca gaagtcagtg ccgtgggtac ccattttaaa atccctgcca     60
ctttgggcta tcgtagttgc acacttttct tacaactgga cttttttatac tttattgaca   120
ttattgccta cttatatgaa ggagatccta aggttcaatg ttcaagagaa tgggtttttta  180
tcttcattgc cttatttagg ctcttggtta tgtatgatcc tgtctggtca agctgctgac   240
aatttaaggg caaaatggaa tttttcaact ttatgtgttc gcagaatttt tagccttata   300
ggaatgattg gacctgcagt attcctggta gctgctggct tcattggctg tgattattct   360
ttggccgttg ctttcctaac tatatcaaca acactgggag gcttttgctc ttctggattt   420
agcatcaacc atctggatat tgctccttcg tatgctggta tcctcctggg catcacaaat   480
acatttgcca ctattccagg aatggttggg ccgtcattg ctaaaagtct gaccctgat     540
atggggatct cgctccatcg cccaggctgg agtgcagtgg cgtgatcttg gttcactgca   600
acttccatct cccaggttca agtgattctc ctacctcagc ctcctgagta tctgggatta  660
caggcgcccg tcaccacgcc cagctaattt tttgtatttt tagtagagat ggggtttcac  720
catgctggcc aggctggtct cgaactcctg atctcatgat tcgcccacct cagcccccca   780
aagtgctggg attacaggca tgagccaccg tgcccggccg cttcgcattt ttctttttgca 840
ggttgcatgc cagccaatat tcctctgtgc tgggaaggga aagtttgagg atgtatcaag   900
accatagcag tggatctcac tgctcttgcc tactcagggc tttatctaca cattgatagc    960
ccctcagagg aaaggcacca gccgaagagt cgacactggc tctgggcttg gatgctgcct   1020
ctgataaacg ctgggcactc tgaccctgaa gccagggagg gagtgcttgg cagctgcctg   1080
ggcacactcc cctcagtcca gttgccaggc gaaattatac agtggatggc agctccacag   1140
agatgctaaa gtttgaggtc taagtgtcag agagagctga caatttttat gaggaaagtg    1200
aacaacaaca ggtgtttatc agtacctgag aattatcatc tagtttaatt aagcaaaggt   1260
atcaggaggt ctgtttcagc tcattccctt tagtatggcc ctaaaaaatc aacagaactg    1320
tcctacttca tgttgcccga ctagcaggca ggtatgtgaa cctaaagtag aagtcctagc    1380
ttacatatta ttcataatta aacacagttc attttattat tctggcaact agtgatattt    1440
catgattata ggccttaaaa atctaataca agtacaatta aaaaaagaca tagaatgctt    1500
acacaataca gaaggcactt tgaggttaca tgataaataa aaatacatta atagaggcag    1560
gattatttat tggttccttc agtgtctgtg tccatggtga tcattgagag cccagttttg   1620
tacttcacct ttggcgaaat agtgttaaag aaaatggcac caaaaacatt aatagcagca    1680
gcaatataga acacggtttg ccattctcca acagtgttat caggggtcag acttttagca    1740
atgacgggcc caaccattcc tggaatagtg gcaaatgtat ttgtgatgcc caggaggata   1800
ccagcatacg aaggagcaat atccagatgg ttgatgctaa atccagaaga gcaaaagcct   1860
cccagtgttg ttgatatagt taggaaagca acggccaaag aataatcaca gccaatgaag    1920
ccagcagcta ccaggaatac tgcaggtcca atcattccta taaggctaaa aattc          1975
```

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        <210> 462
        <211> 716
        <212> DNA
        <213> Homo sapiens




        <400> 462
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gggcatccag gatctccccg aggtagcctg agccgccacc ccagctccca gctggcaggt     120
cctggggtgg aggggggtga aggcacccag aaacctcggg actacatcat ccttgccatc     180
ctgtcctgct tctgccccat gtggcctgtc aacatcgtgg ccttcgctta tgctgtcatg     240
tcccggaaca gcctgcagca gggggacgtg gacggggccc agcgtctggg ccgggtagcc     300
aagctcttaa gcatcgtggc gctggtgggg ggagtcctca tcatcatcgc ctcctgcgtc     360
atcaacttag gcgtgtataa gtgaggggct ctgccccgca tcccaagact tttcttcctg     420
ttgggagctg ccttgggccc attccctccc ctggggggag cccaactgat ggccctggcc     480
ccacccctaa ggaccaaggg agcctgagcg gccttgttta cagcttctgt cctgctcctg     540
catctttgcc agggtccttt tgccaactgt aagggccttg cctcattccc tggcaatggt     600
tccaacctcc ctgcactaat gcctgcatcc cctccggcct cttggccccc tatccctgca     660
cttctgggaa acctccctgg cactctggga aacctccctg gaacaacttc ccaaat         716




        <210> 463
        <211> 595
        <212> DNA
        <213> Homo sapiens




        <400> 463
cttttttct ttttttata aaacatgtca catcttgatg cagttgatgt caagtgtgct       60
taagtcatta tgaatcaaga gactaacaat agtggctgca gaaacaggtt tgttgtctgt     120
acaaagactt caggtaaatt atagtacttc catgttagct gtgcatgtcc accacgcttt     180
gtctgtaact cgagtagaaa aagatgttgt gttttaatta atcattcctt acaattcaag     240
atgaactcca catatttaag aattcttggc tgaaagaaaa gtcttcaaga tactggatgc     300
ctctcaccac tttgacaata aacacacaag aaaaccattg tgtaaggcac tcaaaaggtt     360
cttatcaatc acgagagatc agtcacactg acattcattc ccatgccagg actcacgtaa     420
gggacagcat gcactgcttt gggaaattct ggagtcataa cacgtccatt ttctccagta     480
cttcctgtaa ttgacagcct tgccttgttc ctcatggcat cattcaaggt catcttaaat     540
gagagaggag ggaaagaaag aaaaagagat catacgttat ggttttcaaa tgcat         595




        <210> 464
        <211> 2017
        <212> DNA
        <213> Homo sapiens




        <400> 464
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aaaccaataa cgaaaaatag ttcttcaggt tcttctcctg gaaaggcgga ggacacacca    120
aactgcactg gccctgtcag gggacacggc accctcgtgg gaccaggctc agccctcggg    180
gtggcacgag gtcctgcagg ctgcaggacc ctcacactcc agccccgtct ggtgacccaa    240
cccgggcccg tggtgcatgc tggggaaggc cactggccgg ccctgggct tcggctcctg     300
aggaggcatg gccccacacc ctgcccggcc ataaatatat acagattcct gggcatccag    360
ggcaccagga ccgacgcaga gctggggtcc tgtccctaag cctgtggcac agcgactctt    420
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cagctccttg accctctcca ccatgtcctg ggccgcggaa ggcgatgggt actgcaaggc    600
agcggccttg gtggtggcca cgatgccgcg caggaggtcg cacagcaggt tgctgtagtg    660
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caccagcttg tgggcgctga ggatgacgaa cttgctgtgc gccacaaaga tcttgggcgg    780
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ggcctcacac tgctccaggt agaagagcag cagctgccgg tccgagggcc ccaggccgcc    900
tgttcgcccc ggggccaggg gttgggctgg cgtccagttg gccaggtcgt ggtctatggg    960
ccgtgacacc tcctgttcca gtcgttcaaa ctgcttcagc tgctgcaact ccagctggct   1020
cttgccctgc cgcgtgatgc tgccctttc cagcagctcc ttctgggtct tctcaaactc    1080
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ctggatgctg ctggtcttgt cagtggggtt ggggtgcagg gtgccacccc cctcaggccc   1260
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aagggtggct ccagagcctc cccggccagc gtcgagggcc tgaccatgtg ccaccagcgt   1440
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agatgtgtgg gcagcattgc ccaccgcgct gcgggcaaac tccaacagct cgtggacggc   1560
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ggtggcgctc acaccctgct gcagccgtgc cagggcctcc acagcaactt ccagctccag   1740
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gccggtgctg gaggccgaca ggcgcttgcc ctctgccggg cttcacgtt cagctggggg    1860
aggcaccgca tacacaccac tgtcgaccac gccaccatca gccacctcag gaggaagcac   1920
ccgttcacgg ggcacatcgt acagggtgcc cgggccaggc cgccgcaagc caggggggcac  1980
gtcgtagagg tcaggagccg ggggcggcac gtcatcc                           2017
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<210> 465
<211> 1575
<212> DNA
<213> Homo sapiens

<400> 465
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ccccactctg tcttgttact tccggtagcg aagcctctcc ctcttcctct gctcccgcgg    180
ggtctgtgct gagaataatg gcccggttgg cccgggacga gtggaatgat taatgatgtt    240
ttgcagcagt tttctacgtc tgaaattttt tatgtctctg gaacccagaa tttgctaaga    300
gatggaggaa cctcagaaaa gctatgtgaa cacaatggac cttgagagag atgaacctct    360
caaaagcacc ggccctcaga tttctgttag tgaatttct tgccactgct gctacgacat     420
cctggttaac cccaccacct tgaactgtgg cacagcttc tgccgtcact gccttgcttt     480
atggtgggca tcttcaaaga aaacagaatg tccagaatgc agagaaaaat gggaaggttt    540
ccccaaagtc agtattctcc tcaggatgc cattgaaaag ttatttcctg atgccattag     600
actgagattt gaagacattc agcagaataa tgacatagtc caaagtcttg cagcctttca    660
gaaatatggg aatgatcaga ttcctttagc tcctaacaca ggccgagcga atcagcagat    720
gggagggga ttcttttccg gtgtgctcac agctttaact ggagtggcag tggtcctgct    780
cgtctatcac tggagcagca gggaatctga acacgacctc ctggtccaca aggctgtggc    840
caaatggacg gcggaagaag ttgtcctctg ctggagcag ctgggccctt gggcatctct    900
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ggaagaattt tccaagacgc cctataccat agaaaacagc agccacagga gagccatcct      1020
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taaggctgtg aacccaggca ggtccctgtt cctgctatac gccctcaaga gctcccccag      1140
gctgagtctg ctctacctgt acctgtttga ctacaccgac accttcctac ctttcatcca      1200
caccatctgc cctctgcaag aagacagctc tggggaggac atcgtcacca agcttctgga      1260
tcttaaggag cctacgtgga agcagtggag agagttcctg gtcaaatact ccttccttcc      1320
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gtttctcatc atcaatgcta tgttactctc agttctggaa ttattctcct tttggagaat      1440
ctggtcgaga agtgaactga agtaagtatg ttttaatggt tgtcacaaca ggggatggga      1500
aagaaatacc aagtgagaga aagatcctct tttatttctc acacttgaaa taaatcctcc      1560
atccacccag aaaaa                                                       1575
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<210> 466
<211> 493
<212> DNA
<213> Homo sapiens

<400> 466
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agaaaaggct aggatgatat atgaagatta catttctata ctatcaccaa aagaggtcag       60
tcttgattct cgagttagag aggtgatcaa tagaaatctg ttggatccca atcctcacat      120
gtatgaagat gcccaacttc agatatatac tttaatgcac agagattctt ttccaaggtt      180
tttgaactct caaatttata agtcatttgt tgaaagtact gctggctctt cttctgaatc      240
ttaatgttca tttaaaaaca atcattttgg agggctgaga tgggaaataa aagtagttaa      300
ataacatcag aaactgagtt cctggagaac tacagtttag cattcctcag gctactgtga      360
aaacacaacc gttatggtct ttgtctccat ttttatcaag gtttttccatg gttaagtttg      420
gagaaaatac cacacaaaac aatgaattgc caaattgttt gttttattca agactcaatc      480
tactttgcaa gcg                                                         493
```

<210> 467
<211> 1572
<212> DNA
<213> Homo sapiens

<400> 467
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cttgtactac agtcaagatg aggagtccaa aataatgatc agtgactttg gattgtcaaa       60
aatggagggc aaaggagatg tgatgtccac tgcctgtgga actccaggct atgtcgctcc      120
tgaagtcctc gcccagaaac cttacagcaa agccgttgac tgctggtcca tcggagtgat      180
tgcctacatc ttgctctgcg gctaccctcc tttttatgat gaaaatgact ccaagctctt      240
tgagcagatc ctcaaggcgg aatatgagtt tgactctccc tactgggatg acatctccga      300
ctctgcaaaa gacttcattc ggaacctgat ggagaaggac ccgaataaaa gatacacgtg      360
tgagcaggca gctcggcacc catggatcgc tggtgacaca gccctcaaca aaaacatcca      420
cgagtccgtc agcgcccaga tccggaaaaa ctttgccaag agcaaatgga gacaagcatt      480
taatgccacg gccgtcgtca gacatatgag aaaactacac ctcggcagca gcctggacag      540
ttcaaatgca gtgtttcgga gcagcctcag tttggccagc caaaaagact gtgcgtctgg      600
caccttccac gctctgtagt ttcatttctt cttcgtcggg ggtctcagga gttggagccg      660
agcggagacc caggcccacc actgtgacgg cagtgcactc tggaagcaag tgactggccc      720
tggaggtggg gcccggggtc ggggctgggg aaggggagcc ccagggtcgc cagagccgcg      780
agccactcca gcgagacccc accttgcatg gtgccccttc ctgcatagga ctggaagacc      840
```

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gaagtttttt tatggccata ttttctactg caattctgaa gtgttcattt ctcacaaact    900
gtactgactc gaggggcgct gatttcatag gatctggtgc tgtatatacg aatcttgcaa    960
agctctaact gaacggacct tcttattcct ctcccctaac accatcgttt ccactcttct   1020
cagtgtaggt aaccgtctat ggtgtgtttt ttcattaatg acaaaaaaaa aagggtttca   1080
actggattat ttaaatattg gtaaatattg tgcattaggg tttgtttttc cttttaagaa   1140
gtatgtcctt tgtatctcta agttacatga cctatatctt ttcctcttta atagtagttt   1200
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aattctaata agaggatcag ccgggtgcaa tgactcatgc ctgtaatccc agcacgttgg   1320
gaggccaagt cgggcggatc acaaggtcag gagatcaagg ccatcctggt tctatactgt   1380
gtagattgct ggctactaaa aatacaaaaa attagccggg cgtggtggca cacacctagt   1440
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tgcagtgagc tgagatcgtg ccactgcact ccagcctggg tgacagagca agactctgtc   1560
tcaaaaaaaa aa                                                        1572
```

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         <210> 468
         <211> 1927
         <212> DNA
         <213> Homo sapiens
```

```
         <400> 468
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ggctacatca ctaaagagga aatgcttgat ataatgaaag caatatacga tatgatgggt    180
aaatgtacat atcctgtcct caaagaagat gctcccagac aacacgttga aacattttt     240
cagaaaatgg acaaaaataa agatggggtt gttaccatag atgagttcat tgaaagctgc    300
caaaaagatg aaaacataat gcgctccatg cagctctttg aaaatgtgat ttaacttgtc    360
aaatagatcc tgaatccaac agacaaatgt gaactattct accacccta aagttggagc     420
taccactttt agcatagatt gctcagcttg acactgaagc atattatgca aacaagcttt    480
gttttaatat aaagcaatcc ccaaaagatt tgagctttca gttataaatt tgcatccttt    540
tcataatgcc actgagttca ggggatggtc taactcattt cactctgt gaatattcaa     600
aagtaataga atctggcata tagtttatt ggttccttag ccatgggatt attgaggctt     660
tcacatatca gtgattttaa aatatcagtg ttttttgcta ctcatttgta tgtattcagt    720
cctaggattt tgaatggttt tctaatatag tgacatctgc atttaatttc cagaaattaa     780
attaattttc atgtttgaat gctgtaattc catttaaatt ccattatat actttaagga    840
aacaagatta caacaattaa aaaaacacat agttccagtt tctatggcct tcccaccttc    900
tgttagaaat tagtttatc tggcattttt aaacatttaa aaattattaa acatttaaaa    960
attagtttat tatcagatat cagcatatgc ctaataaaac ttattttaat aagcatttaa   1020
ttttccataa tatgttacag ccaaggccta tataataatt ttggatttgt tcaatctttc   1080
ttacaggctg ttttctattg tatcaatcat tagtatcaat cattaagtgg aagttgaaga   1140
aggcatcaaa caaaacaagg atgtttacag acatatgcaa agggtcagga tatctatcct   1200
ccagtatata gtaatgctta ataacaagta atcctaacag cattaaaggc caaatctgtc   1260
ctctttcccc tgacttcctt acagcatgtt tatttatatt acaagccatt cagggacaaa   1320
gaaagaaacc ttgactaccc cactgtctac taagaacaaa cagcaagcaa aattagcaag   1380
caaaattcac tttgaaagca ccagtggttc cattacattg acaactacta ccaagattta   1440
gtagaaaata agtgctcaac aactaatcca gattacagta tgatttagct catcataatt   1500
cagattattt ttaatcatct tagccaaaac tgtaaagttg ccacattact aaagccacac   1560
acatcgtccc tgttttgtag aaatatcaca aagaccaaga ggctacagaa ggaggaaatt   1620
tgcaactgtc tttgcaacaa taaatcaggt atctattctg gtgtagagat aggatgttga   1680
aagctgccct gctatcacca gtgtagaaat taagagtagt acaatacatg tacactgaaa   1740
tttgccatca cgtgtttgtg taaactcaat gtgcacattt tgtatttcaa aaagaaaaa    1800
taaaagcaaa ataaaatgtt aaaaaaaaaa aaagggggcg gccgttttaa aggatccagt   1860
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cgggccg                                                             1927
```

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        <210> 469
        <211> 1013
        <212> DNA
        <213> Homo sapiens



        <400> 469
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aaatttgttt cctggtggac agccgggtaa tgcttttagc tgctcgcatg cttgtctttc  4620
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ggcatgtgct gccagaccca aagggaaaaa aaaaa                              4715
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<210> 474
<211> 1374
<212> DNA
<213> Homo sapiens

<400> 474

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gctgcagaga ctatcattga tacgaagggt gtgactgctc tggtcagcga tgctatccac  180
aatgacttgc aagatgactc cctctacctt cctccctgct atgatgatgc agccaagcct  240
```

```
gaagacgtgt ataaatttga agatcttctt tcccctgcgg agtatgaagc tcttcagagc    300
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ggaaaaaaga agccttgctt tagcacaggt atgaagccag aagccagcat ctcaactgtg   1320
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        <210> 475
        <211> 3076
        <212> DNA
        <213> Homo sapiens
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        ggcgaaggcc aactccaatc cgttcgaggt gaaagttaac aggcagaagt tccagatcct    180
        gggccggaag acgcgccacg acgtgggact gcccgggggtg tctcgcgcac gggccctcag    240
        gaagcgtaca cagactttac taaaagagta caaagaaagg ataaatcca atgtattcag    300
        agataaacgc ttcggagaat acaacagcaa catgagcccc gaggagaaga tgatgaagag    360
        gtttgctctg aacagcagc gacatcatga gaaaaaaagc atctacaatc taaatgaaga    420
        tgaagaattg actcattatg gccagtcttt ggcagacatc gagaagcata atgacattgt    480
        ggacagtgac agcgatgctg aggatcgagg aacgttgtct ggtgagctga ctgctgccca    540
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        ttcaggcggg gaggacacag aggagagcga cagcccagat agccacttgg acctggaatc   1200
        caacgtggag agtgaggaag aaaacgagaa gccagcaaaa gagcagaggc agactcctgg   1260
        gaaagggttg ataagcggca aggaaagagc tggaaaagct accagagacg agctgcccta   1320
        cacgttcgca gcccctgaat cctatgagga actgagatct ctgttgttag aagatcgat   1380
        ggaagagcag cttttggtgg tggagagaat tcagaagtgc aaccacccga gtctcgcaga   1440
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        tgtgctcatt tatttgaaaa tcactgggct gctatttcca acttccgact ctggcaccc   1740
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```
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caattataaa tgaaaa                                                     3076
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        <210> 476
        <211> 959
        <212> DNA
        <213> Homo sapiens
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        aagtgggcgc tgactgtccc cagggctaca agaggcttaa cagcacccac tgccaggaca     180
        tcaacgagtg cgcaatgccg ggcgtgtgtc gccatggtga c̈tgcctcaac aaccctggct     240
        cctatcgctg tgtctgccca cctggccata gtttaggccc ctcccgtaca cagtgcattg     300
        cagacaaacc ggaggagaag agcctgtgtt tccgcctggt gagccctgag caccagtgcc     360
        agcacccact gaccacccgc ctgacccgcc agctctgctg ctgcagtgtc ggcaaggcct     420
        ggggcgcgcg gtgtcagcgc tgcccaacag atggcaccgc tgcgttcaag agagatctgcc     480
        cagctgggaa gggataccac attctcacct cccaccagac gctcaccatt cagggcgaga     540
        gtgacttttc ccttttcctg caccctgacg ggccacccaa gccccagcag cttccggaga     600
        gccctagcca ggctccacca cctgaggaca cagaggaaga gagaggggtg accacggact     660
        caccggtgag tgaggagagg tcagtgcagc agagccaccc aactgccacc acgactcctg     720
        cccggcccta ccccgagctg atctcccgtc cctcgccccc gaccatgcgc tggttcctgc     780
        cggacttgcc tccttcccgc agcgccgtag agatcgctcc cactcaggtc ȧcagagactg     840
        atgagtgccg actgaaccag aacatctgtg ccacggaga gtgcgtgccg gcccccctg      900
        actactcctg ccactgcaac cccggctacc ggtcacatcc ccagcaccgc tactgcgtg      959
```

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        <210> 477
        <211> 3652
        <212> DNA
        <213> Homo sapiens
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        <400> 477
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        tatttcttgg gaatgggggat atatacatta ttcaccaata aatcgctaat gctttaaatt   180
        tacaattacc ctatttgtag aaacctgaaa gatcattcca attaaatgaa aaaaaaattg   240
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        cagccaaaac ctttaaccca aaattcagaa actgcagtcc tacaagtgaa caaactagtg   360
        ttttaattta attatcatga ttgttgttaa cactgaaaaa aaaacatgat ggctcctgaa   420
        acaagacagg ttagcaactg gtacagcttt cccttctggg cactcaaagc tttgcccttg   480
        attattattt ttatttcatc ttttcaaaca cagacaattg ctccaacttg aaagtttcaa   540
        tggaattttg gcatttaata ttgctaatgc ttgctaagat ttaagatctc ccaatgatga   600
        gaatcagaaa atgacgcacg actaaattaa aatcatccta aaagacttac tacatagtgg   660
        tatctggtat tcaatatcaa tagtgttttt gaattacatg atatgttttt cacaaacata   720
        gcacctcatc aaatatctgg taaacacttt gcaatcacaa taagtgttgg gagaccaagt   780
        tccaaagaca attatgtgat tcacttaaag gtaacattgt aagacaagtc tcaggcataa   840
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        gcaccatcct attaagacgt ggtaatatgt ttccaaacca aaaaaagtcg gtaagtgtta   960
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        aagatactaa atgaagtcca attttatctt gtaaagtttt agtgtaaaaa ctaatgtact  1140
        gaaattcagt aaagtttaac tttcatctaa atgtaacgaa acaactattc attttggtga  1200
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        tagtctttgt aggagatggg gacgcagtac caggtgagtc agttcctcca tcggaagtac  1320
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        tcacttcagc ttgtattgga cccagttac cattttcagg gacagctctt tctacatttc  1620
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        catctcgaag tgttgaaatt ctcccactca gcaaactgga aaaaaaagaa tctggaatcc  3540
        acataagagt ttgtcttgag gtactaaatc tggtccccccc tacgttcagt tggacgatct  3600
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249

cgccgctgcc ggccgccgcc gcggggaagc tgccgcagtg ccctcccgcc at   3652

<210> 478
<211> 2477
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(2477)
<223> n = a,t,c or g

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<210> 479
<211> 1297
<212> DNA
<213> Homo sapiens

<400> 479
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ccagttcaag cgattctcat gcctcgacct cccgagtagc tgggaattac aggtgcccgc   1260
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<210> 480
<211> 569
<212> DNA
<213> Homo sapiens

<400> 480
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tcttcagcct cccaagatgc taggactaca ggtgcatgtc aacatcccca gctaattggt    180
tttttttttt tttgtagaga cagcatctcc ccaggttacc catgctggtc caaacacctg    240
gtctcaagaa atccttctgc tgtgacctcc caagtgctca ggattaaaac atgacccacc    300
atgctcagag tccatttca tttctgattt gagtaatttt aaactttct cttttttct    360
tagtcaatct agttaatggt tgtcaatttt gttgatttta ttttgaagaa tcaacttttg    420
gtttcattaa tttcctctat tctttttcca ttctccattt tatttatgtc cactctaatc    480
cttattattt ccctcattca ctgtgcttgg gtttagtttg ttcttctttc atatcctgaa    540
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<210> 481
<211> 1570
<212> DNA
<213> Homo sapiens

<400> 481
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aggacagagg gtagctgccg tcgccgtcgg cagtcaagca gttctgcaaa ttctcagcag     180
ggtcagtggg agacaggctc ccccccaacc aagcggcagc ggcggagtcg gggccggccc     240
agtggtggtg ccaaacggcg gcggagaggg gccccagccg caccccagca gcagtcagag     300
cccgccagac cttcctctga aggcaaagtg acctgtgaca tccggctccg ggttcgagca     360
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<210> 482
<211> 1774
<212> DNA
<213> Homo sapiens

<400> 482
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gttaattttc ctgagagacc aagacctggt ctcctcggtt caattggaga aggaagatac     540
ttcaaaaaag aaccaaactt gttttctcat gatgcagttg tgagagaaat gcctacaggg     600
```

```
gtttcaagtc aagcagaatc ctactatccc tcacctgggc ccatctcaag tggattgtca    660
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ccacgctcag gcaatacaaa cccactgagt agtttttcaa caaggacact tccttctaat    780
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<210> 483
<211> 3024
<212> DNA
<213> Homo sapiens
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<400> 483
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gagcacgagg agggagcgcc ctgcactgcc atccgagagg tgtctctgct gaagaacctg   480
aagcacgcca atattgtgac cctgcatgac ctcatccaca gatcggtc cctcaccctg    540
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ctgcgtggga tgcacacgga tgacagaatc aaggcgccag gatgggcact ctgccctgga   1680
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<210> 484
<211> 1148
<212> DNA
<213> Homo sapiens
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ccttgggacc  agagtgaggc  tgagataaag  gggagcccag  ggccagaccc  ctgtcaccca    180
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gctcacaccc  cccttattgg  accatcagct  ctgtgatgcc  cccttctcct  ggctacaaac    360
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<210> 485
<211> 1256
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```
            <212> DNA
            <213> Homo sapiens




            <400> 485
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gcctgcccct gatctgaaat acaacatcca agagctcgag gccttttac cacccgtttg    180
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            <210> 486
            <211> 2547
            <212> DNA
            <213> Homo sapiens




            <400> 486
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<210> 487
<211> 1228
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1228)
<223> n = a,t,c or g

<400> 487
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      <213> Homo sapiens

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      <223> n = a,t,c or g




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257

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<213> Homo sapiens
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            <211> 1179
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            <220>
            <221> misc_feature
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            <223> n = a,t,c or g

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<211> 900
<212> DNA
<213> Homo sapiens

<400> 495
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<211> 4235
<212> DNA
<213> Homo sapiens

<400> 496
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262

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<210> 497
<211> 498
<212> DNA
<213> Homo sapiens
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ctgtgcccgg cctgacttca aatcctgtgt tgaatagaag tagtgagagc gggcatcctt       180
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acacaaaagt gtcaagtcag ccctgcccaa gggccccagt gcccatcttc ctgctgaggg       420
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actcagcctc acacgaaa                                                      498
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        <211> 421
        <212> DNA
        <213> Homo sapiens
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tgcgtgctgg ccagctggct caccgccttc gtcctcacca agtccttcct gccagggggg       180
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agatgagcac acacccctg aactcagaga ccccagagtg gtcacgtgat agcctagcaa       360
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g                                                                        421
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        <211> 572
        <212> DNA
        <213> Homo sapiens
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gagcagccag gccagggcgg cagcaccagc gccttcgagc agctgcagag gtcccgacgg       180
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ctccggagat gtcgaactct ctcaggttca cccagaccaa agaatttta gaagattcat       300
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tatgtatatg catgcatgct ttgtagttct ctgggtgaaa agatctcaca ccaatgtaca       480
taatgtggcc atcctttcca tttttcaagaa gttgccttgc tttgatactg caaattcagt       540
atttgtacac tggaatgata aaaagatgtt cc                                      572
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        <211> 1642
        <212> DNA
        <213> Homo sapiens




        <400> 500
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        <210> 501
        <211> 2629
        <212> DNA
        <213> Homo sapiens




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```

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266

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```

```
        <210> 503
        <211> 1586
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 503
aaatgcacat ctcatggcag ctaagccaca tggctgggat ttaaagcctt tagagccagc    60
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ttctcagtgt agggcagaga ggtctaacac caacataagg tactagcagt gtttcccgta   180
ttgacaggaa tacttaactc aataattctt ttcttttcca tttagtaaca gttgtgatga   240
ctatgtttct attctaagta attcctgtat tctacagcag atactttgtc agcaatacta   300
agggaagaaa caaagttgaa ccgtttcttt aataatgctg atctactttt tgttgaattt   360
gtattttatt tcaagtgtca aagaaatcat ctttgtttat ttagatgaaa ccaaacacta   420
cacatttaca ctcacactgc ttccaggacc caagggtttc acagaccatt tgcctacctg   480
gttctttcct ctcctctttc cagtgatttc tagaataccc tttcaaagga ccacatgaat   540
atacgaactg taaaattcaa ctttgatctt ttgcgaaatg ttttatttac tgcttaaaat   600
ctaggtgggt ggatatattc atgtatgcat atattgatag attaatacaa acataagtat   660
gtatttaaat tgaaggataa gtaaagtgag agtacaacag ccccattctt agttaaaaag   720
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cgcggtgccg gtggcggcac ctccatggcc ttctctcgac ctacgacaa acttgagcgc  1440
tcaggacttc aagtcctcgc ggacgtgccg cgggagagcg taactgtacg aggtgagaat  1500
ccgtgcattt gacccaggtt aaccctctgc cagagggctc gacacccaca ccttcagtcc  1560
ccggcctcgc tttgcggacg cgtggg                                        1586
```

```
        <210> 504
        <211> 1442
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 504
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gtaggcgtct gtgtgcgccg ccaagtcggt ggggcgggga cgcgaggtgt ggatgggggg   120
tcgccttgac ctctgcctca gccagtagcg cagtctcggc ctcgccgtta cggagatggt   180
```

```
gccctgggtg cggacgatgg ggcagaagct gaagcagcgg ctgcgactgg acgtgggacg    240
cgagatctgc cgccagtacc cgctgttctg cttcctgctg ctctgtctca gcgccgcctc    300
cctgcttctt aacaggtata ttcatatttt aatgatcttc tggtcatttg ttgctggagt    360
tgtcacattc tactgctcac taggacctga ttctctctta ccaaatatat tcttcacaat    420
aaaatacaaa cccaagcagt taggacttca ggaattattt cctcaaggtc atagctgtgc    480
tgtttgtggt aaagtgaaat gtaaacgaca taggccttct ttgctacttg aaaactacca    540
gccatggcta gacctgaaaa tttcttccaa ggttgatgca tctctctcag aggttcttga    600
attagtgttg gaaaactttg tttatccgtg gtacagggat gtgacagatg atgaatcctt    660
tgttgatgaa ctgagaataa cattacgttt ttttgcatct gtcttaataa gaaggattca    720
caaggtggat attccatcta ttataaccaa gaaactatta aaagcagcaa tgaagcatat    780
agaagtgata gttaaagcca gacagaaagt aaaaaataca gagtttttac agcaagctgc    840
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ctatttaagg aaacttactg aactgctttt tccttatatt ttgcctccta aagcaacaga    960
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gcaacaagat cttttatttc gtttttatgaa ctttctgaaa caagaaggcg cagtgcacgt   1260
gttgcacgtt ttgtttgact gtggaggaat ttaatgatag aattttacga ccagaattat   1320
caaatggatg aaatgctgtc tcttcatgaa gaattgcaga agatttataa aacatactgt   1380
ttggatgaaa gtattgacca aattagattt gatcccttca ttggtagaag agattccaag   1440
aa                                                                   1442
```

<210> 505
<211> 1284
<212> DNA
<213> Homo sapiens

<400> 505
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ccagagcctg gctgaggtcc tgcagcagct gggggcctcc tctgagctcc aggcagtact    60
cagctacatc ttccccactt acggtgtcac ccccaaccac agtgcctttt ccatgcacgc   120
cctgctggtc aaccactaca tgaaaggagg cttttatccc cgagggggtta ccagtgaaat   180
tgccttccac accatccctg tgattcagcg ggctggggggc gctgtcctca caaaggccac   240
tgtgcagagt gtgttgctgg actcagctgg gaaagcctgt ggtgtcagtg tgaagaaggg   300
gcatgagctg gtgaacatct attgccccat cgtggtctcc aacgcaggac tgttcaacac   360
ctatgaacac ctactgccgg ggaacgcccg ctgcctgcca ggtgtgaagc agcaactggg   420
gacggtgcgg cccggcttag gcatgacctc tgttttcatc tgcctgcgag gcaccaagga   480
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gatggagcgc tacgtctcca tgcccaggga agaggctgcg gaacacatcc ctcttctctt   600
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agggaaagcg gggcagtgac tatgagacct tcaaaaactc ctttgtggaa gcctctatgt   780
cagtggtcct gaaactgttc ccacagctgg aggggaaggt ggagagtgtg actgcaggat   840
ccccactcac caaccagttc tatctgggct gctccccgag gtgcctgcta cggggctgac   900
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cccaacctct atctgacagg ccaggatatc ttcacctgtg gactggtcgg ggccctgcaa  1020
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cttgattcta ggatccgggc acagaagaaa aagaattagt tccatcaggg aggagtcaga  1140
ggaatttgcc caatggctgg ggcatctccc ttgacttacc cataatgtct ttctgcatta  1200
gttccttgca cgtataaagc actctaattt ggatctgatg cctgaagaga ggcctagtta  1260
aatcacaatt ccgaatctgg ggcc                                          1284
```

```
<210> 506
<211> 1757
<212> DNA
<213> Homo sapiens



     <400> 506
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acaatttctg gatcttcctc ctccgcctgg cactgcagct gagccttggc ggatatgctc     180
ggggcccctcg gcgcagagga acttagcctc gattctcttc ctgaggggct tcttaacttt     240
tccaagccag gcagtgagcg tggtgggagg ctggggctgg tgcctgcgga cagctccaga     300
tggaatccca ggccacggtg cttctagtgt ccccccagcg agcttgcggt gtggcaggcg     360
gccaggaagg gccatgagca gggtggcctg aatgaaaacc gagggccgaa gccagcctga     420
ctccctcgcc taagctgggg ctcggtccga ggcacacgca tggccttggc cagacacaaa     480
ccaagagact gccatgacag acagagcaga aacctcccga gcactgtgtt caagctaagc     540
tttcctaaga cgggcttctc aggcgagacg tgacaccaga caccgtcgca tgttacttgg     600
agagaacaga gacgtgcggg ccacagcggc ccaccaaagg ctgccatcca agctgagttc     660
cgcaggcctc acctgcagct ggagagggac cttgccctga tcctcctggt aggtacccgc     720
taagggattc aggacagagc gtcacactgc acgcagggtc ctccgccacc accatccaag     780
aaccccgggg ggctggccac gcgctggcct ctgccaagga gtgccagtgg ttcccgggac     840
ggggccgccc aagcaggtga gggaggttta gatgaatgac ttggccaggg tcaccatgtg     900
gtccacgcca catgccacgt ccacaggctc cccaggcatc gtcaccctcc atgggaaata     960
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gatttctggg ttgaactccg tcaagccaaa gagagtgggt ggaatcattt cagggacggc    1140
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tccttccctg tcagtcaaca caagagagtg agctcggccg caggagactt gcagcacccg    1740
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```

```
<210> 507
<211> 618
<212> DNA
<213> Homo sapiens



     <400> 507
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gtcatcaagc tggaagagga gttacgagag aagcaagcat atgttgagaa agttgagaag     180
ctgcagcagg ccctgaccca gctgcagtct gcatgtgaga gcgagaaca gatggagcgg     240
agactgcgga cttggctgga gagagagctg gatgcactga gaacccagca gaaacatgga     300
aatggccagc cagccaacat gccggaatac aatgccccag ccctcctgga acttgtgcgg     360
gagaaggagg agcggatcct ggccctggag ccgacatga caaagtggga gcagaagtac     420
ctggaggaga gcaccatccg acactttgcc atgaatgccg cagccactgc agcagctgag     480
aggacacca cgatcatcaa ccactcacgg aatggcagct acggagagag ctcgctggag     540
```

```
gcccacatct ggcaagagga ggaggaggtg gtgcaggcca acagaaggtg tcaggacatg      600
gaatacacta ttaaaaat                                                     618
```

<210> 508
<211> 2214
<212> DNA
<213> Homo sapiens

<400> 508
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cctacccagc acgcgctccg cgcccactgg ttccctccag ccgccgccgt ccagccgagt      120
ccccactccg gagtcgccgc tgccgcgggg acatggtcct ctgcgttcag gggtgagcac      180
cccccttgtaa gctcagggct actgttgggt gtcagggaac aaagttttag actgctgcgc      240
tccaaagcgg gcacacacat gtacctagaa cacaccagcc actgtcccca ccatgatgat      300
gacacagcca tggacacacc cctgcccaga cctcgccctt tgctggctgt ggagcggact      360
gggcagcggc ccctgtgggc ccgtccctg gaactgccca gccagacat gcagcccttg      420
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ccaaaggtgc tggacccaga ggaggatctg ctgtgcatag ccaagacctt ctcctacctt      540
cgggaatctg gctggtattg gggttccatt acggccagcg aggcccgaca cacctgcag      600
aagatgccag aaggcacgtt cttagtacgt gacagcacgc accccagcta cctgttcacg      660
ctgtcagtga aaaccactcg tggccccacc aatgtacgca ttgagtatgc tgactccagc      720
ttccgtctgg actccaactg cttgtccagg ccacgcatcc tggcctttcc ggatgtggtc      780
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cctgctccca ccccggcccct gcctatgcct aaggaggatg cgcctagtga cccagcactg      900
cctgctcctc caccagccac tgctgtacac ctaaaactgg tgcagccctt tgtacgcaga      960
agcagtgccc gcagcctgca cacctgtgc cgccttgtca tcaaccgtct ggtggccgac     1020
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ctctgactgt acggggcaat ctgcccaccc tcacccagtc gcaccctgga ggggacatca     1140
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cccagcagag cctgtgtctc accccctcac aggacagagc tgtatctgca tagagctggt     1920
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cagtttggtg gtcttttctc ttccactgat ttttctgtaa tgacattata cctttattac     2160
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```

<210> 509
<211> 2355
<212> DNA
<213> Homo sapiens

```
     <400> 509
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cagggaaga gatggctgtg aatattctct tggactgacc ccgacaggca tattaatctt     180
tgaaggagct aacaaaatag gcttattctt ttggcctaaa attaccaaaa tggattttaa     240
aaagagcaaa ttgacactcg tggtggtcga ggatgatgat cagggacgtg agcaagagca     300
cacgtttgtg ttccggttag acagtgccag gacctgcaaa cacctttgga agtgtgcagt     360
tgagcaccac gcattcttcc gactgcggac gccaggaaac agcaaatcca atagatccga     420
ctttatcagg ctgggctctc gcttcagatt cagtgggcgg acagaatatc aagctacaca     480
tggctccagg ttacgaagaa ccagcacctt tgagaggaag cctagtaaac gttatccatc     540
ccggagacat tcaacgttca aagcaagcaa cccagtgata gcagcccagc tctgctctaa     600
aacaaatcca gaagtccata attaccagcc tcaatatcat cctaatatcc atcccagcca     660
gccccggtgg catcctcact ctccaaatgt caggccatcc tttcaggatg acaggtcgca     720
ttggaaagca tcggccagtg gagatgacag ccattttgat tatgtccacg accagaacca     780
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gttgaggaca tacattcaaa ctaattttat cacaaggaaa actgcaatac ccacttcctt    1440
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cttttaaaaa aaaaa                                                      2355
```

```
     <210> 510
     <211> 775
     <212> DNA
     <213> Homo sapiens
```

```
     <400> 510
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aagaaacgat gagatggttt ttgtttgtgg taccaatgca ttcaatccca tgtgtagata     180
ctacagggta agtatatttt atgtgatatg cttctttttga tcaacttttc tcccttcact     240
```

271

```
gatatgctgt tagagttgaa atctttctgc tttccagtaa tttgttttat ctctagtgca    300
atgaaagaat aaagacagaa ttcttcaaat ggaattttaa tacaaataaa atagtattgc    360
cttcaaacgg gcacgttgaa tagatatgac actggctatt tacttttctt ttgtagttga    420
gtaccttata atatgatggg gaagaaatta gtggcctggc aagatgccca tttgatgcca    480
gacaaaccaa tggtgccctc tttgctgatg ggaagctgta ttctgccaca gtggctgact    540
tcttggccag cgatgccgtt atttatcgaa gcatgggtga tggatctgcc cttcgcacaa    600
taaaatatga ttccaaatgg ataaaagagc ccactttctt tatgccataa aaatggaact    660
atgtctattt ttcttttcga gaaatcgtgg caacataata attaggcagg ctgtggattc  · 720
ccggtggccc gatatgaaaa acaactggtt ggtcccacgg tctgagaaca ttgat        775
```

```
        <210> 511
        <211> 1553
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 511
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cacacctgat tttaagtgct taaaggacag aaaatgtcgt tgctttaaat tgttgctttg     180
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      · <212> DNA
        <213> Homo sapiens
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        <211> 1596
        <212> DNA
        <213> Homo sapiens
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ccccgcccgc tcggcccgcg cccgccatgg tccgtccgcg ccgtgccccg taccgctccg    180
gcgccggggg ccccctcggg ggtcgcgggc ccctccgcg gccctcgtg gtgcgcgccg    240
tccgctcgcg ctcctggcct gccagccccc gaggcccgca gcctccgcgg gatccgggcc    300
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gcaacatgga ggatggtgtc ctgaggcctc caaggacggt ccccacccct ctacgtttcc   1560
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        <210> 514
        <211> 963
        <212> DNA
        <213> Homo sapiens




        <400> 514
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ggccgccggc ccactccatc cccgagtggg actggaccac ggccctggct gctgccactg     180
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cag                                                                   963
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        <210> 515
        <211> 777
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(777)
        <223> n = a,t,c or g




        <400> 515
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tggagctgcc ggcccccaag tacatgaatg tgcagatgat acacagattg tgcacccagc     180
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<210> 516
<211> 3206
<212> DNA
<213> Homo sapiens

<400> 516
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tggttgtcag ggagcagcca cttgcctcag gggctccctg accctcagtg aaaggtgact      600
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275

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<210> 517
<211> 1731
<212> DNA
<213> Homo sapiens

<400> 517
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<210> 518
<211> 1327
<212> DNA
<213> Homo sapiens

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```

```
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      <211> 1002
      <212> DNA
      <213> Homo sapiens
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agtctttcat atttatatat ggtatatgta ttttctatat atatatttat atatttttaca     300
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```

```
      <210> 520
      <211> 2966
      <212> DNA
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<213> Homo sapiens

<220>
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<222> (1)...(2966)
<223> n = a,t,c or g

<400> 520
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tggcctctgt gaaggaaaat ccactctagt ccctacctgc atttctcagc cttgcttacc     480
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```

278

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        <211> 1041
        <212> DNA
        <213> Homo sapiens




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caatcttggc aatgacctaa gcaatgtcgt ggataagctg gaacctgttc ttcacgaggg       180
acttgagaca gttgacaata ctcttaaagg catccttgag aaactgaagg tcgacctagg       240
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aatcagcaac tccctcatcc tggatgtcaa agctgaaccg atcgatgatg gcaaaggcct       420
taacctgagc ttccctgtca ccgcgaatgt cactgaggcc gggcccatca ttgaccagat       480
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cgctgaaaag cactgtatcc tccctgctgc agaaggagat atgtccactg atccgcatct       720
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atttctgcac caaaaaaaaa a                                                1041




        <210> 522
        <211> 1295
        <212> DNA
        <213> Homo sapiens




        <400> 522
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agagaaaaaa caaaagacca caacaatatt ccaaattata ggttgagaga atgtgactat       180
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gaataatgct agatttaaaa acagtgtgaa atcacacttt ggtctgtaaa catatttagc       300
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tgaacaagta ccaacccaga tagcaacatc cactaatcca gcaccaattc cttcacaaag       540
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aactcttaga gcactatttg aacgcatctt tgtaaatgta cactccgcaa ttttcccaag       780
atctatgcca taattcaatg aactccatga acactgcttg tagttgggtg tccaggactc       840
ctcaaagctt tcctcagac attccccctt ttctcctttg aatccatccc gacctgggat       900
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```

```
gagcagcagg aggccgcgga gccgctgcgg ggaggcggcg gggccctggg gtcgcatggc    1140
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agcgtctggc tccgccgcgc tccgaggccg ccgcaggctg catcaatgcg cctttcaccc    1260
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```

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        <210> 523
        <211> 2014
        <212> DNA
        <213> Homo sapiens
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```

```
        <210> 524
        <211> 2151
        <212> DNA
        <213> Homo sapiens
```

```
        <220>
```

```
       <221> misc_feature
       <222> (1)...(2151)
       <223> n = a,t,c or g




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gtgttgagta ggtttctgag gatgcaccct ggcttgaaga gaaagactgg caggattaac     180
aatatctaaa atctcacttg taggagaaac cacaggcacc agagctgcca ctggtgctgg     240
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```

```
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       <211> 1869
       <212> DNA
       <213> Homo sapiens




       <400> 525
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ctgtctgccc ggcccagcac tgtggtgcct cgaggaggac acgtggctct tcagtgtcac     180
tatcgtcgtg ggtttaacaa tttcatgctg tacaaagaag acagaagcca cgttcccatc     240
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gccctccaa                                                          1869
```

<210> 526
<211> 6655
<212> DNA
<213> Homo sapiens

<400> 526
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<211> 1081
<212> DNA
<213> Homo sapiens

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<222> (1)...(1081)
<223> n = a,t,c or g
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```
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       <211> 1098
       <212> DNA
       <213> Homo sapiens




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  aacatgtgag caaaagaatc tatatcataa ttaagttcaa gggaaggtac tatgcctgga    540
  cgtgcacgta ggccagattt atgtttctct ccacccaaac atctcagtgg agtaaagaat    600
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       <211> 1998
       <212> DNA
       <213> Homo sapiens




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  taaaacagaa atcatgcagt taagtcaatt gagaaaaaaa aagggatttg ttgtctttac    840
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<211> 766
<212> DNA
<213> Homo sapiens
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<210> 531
<211> 1891
<212> DNA
<213> Homo sapiens
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<210> 532
<211> 1381
<212> DNA
<213> Homo sapiens

<400> 532

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ccaggtgctc ctgcaggagt cattccacca aaggatgtac acatgttttt cccatggcca     480
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gaggatttcc aagtgtctct ggctgtgacc aggtcagagt gtttgcgtca aacacatgca     720
gcttcgtgtc ctgcacgggc tgggcacctc tctctccgcc cccaaagaca tatagctggt     780
ttccaatggc tgccgatgat gtgtggaatg ttcttgggga tggtgggggg ctggtcactt     840
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attggttggc acctccaaat acccagatac ggtcaggtgt gcaggaggga atgaagctag     960
catgttcata ccggggcaag aggcccttgc aggtatctaa gtcccactgg tgttttccca    1020
gatccatggt gtgcacgtct gagaagcttc tgtttggatt tgctccccca acaatgaaga    1080
```

```
ccttccctct cttggcatta ccaactgggg gtaaatatga acagctgtgg ccaactcgag   1140
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t                                                                   1381
```

```
        <210> 533
        <211> 1986
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 533
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aatacaagtc aaaattgcaa tggtatacaa ttaatatacc atttaacatt cccaatagta    180
gcctacaact tccatttcca ctgtggaaaa cggtttggaa gttcctcacg gtagtcaagt    240
tacttaactg ctctgtaaaa tgaagttaat cacattcact ttggatgaat gagttcatat    300
atattagcta taattactac agcaattatc attgtgtaca ttattactga ttgggtcaaa    360
ttattaaccc cgtctcccta attcatttac ttttgttact ttggatgaat atttaaagta    420
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cagtagcttt cccaatagaa aaacctcaag tatcctggta tcaaaatcct catatgtttc   1200
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cctccgccca gggcagcctt gcccaccgcc taccgcgact gctcctcgtc aaacggcaag   1920
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gggact                                                             1986
```

```
        <210> 534
        <211> 1891
        <212> DNA
        <213> Homo sapiens
```

```
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tggaacccca acgtccccga gagtccccga atccccgctc ccaggctacc taagaggatg     180
agcggtgctc cgacggccgg ggcagccctg atgctctgcg ccgccaccgc cgtgctactg     240
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agccagtttg gcctcctgga ccacaagcac ctagaccatg aggtggccaa gcctgcccga     660
agaaagaggc tgcccgagat ggcccagcca gttgacccgg ctcacaatgt cagccgcctg     720
caccggctgc ccagggattg ccaggagctg ttccaggttg gggagaggca gagtggacta     780
tttgaaatcc agcctcaggg gtctctccgcca ttttttggtga actgcaagat gacctcagat     840
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gccaagagcc tctctggagg ctggtggttt ggcacctgca gccattccaa cctcaacggc    1260
cagtacttcc gctccatccc acagcagcgg cagaagctta gaaagggaat cttctggaag    1320
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ccatctggaa acttgtggac agagaagaag accacgactg gagaagcccc ctttctgagt    1560
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gagggaccac ttggggccag ccagactggc ctcaatggcg gactcagtca cattgactga    1740
cggggaccag ggcttgtgtg ggtcgagagc gccctcatgg tgctggtgct gttgtgtgta.    1800
ggtcccctgg ggacacaagc aggcgccaat ggtatctggg cggagctcac agagttcttg    1860
gaataaaagc aacctcagaa caaaaaaaaa a                                    1891
```



```
        <210> 535
        <211> 1874
        <212> DNA
        <213> Homo sapiens
```



```
        <400> 535
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agccttgatg accccgggaa ccggggcccc acccgcgcct ggtgacttct ccggggaagg     180
gagccaggga cttcccgacc cttcgccaga gcccaagcag ctcccggagc tgatccgcat     240
gaagcgagac ggaggccgcc tgagcgaagc ggacatcagg ggcttcgtgg ccgctgtggt     300
gaatgggagc gcgcagggcg cacagatcgg tgcgtgggga gggttgggcg ttcctgaccc     360
cgactgggag gtcagcccga gagactttgg gtccctgggg gtgcgacggt gccccactac     420
cagcaccggc cccagggtgc cccaccgctg tgggctgcca ccctcacgcg tacccccaca     480
taccagggggc catgctgatg gccatccgac ttcgggggcat ggatctggag agacctcgg     540
tgctgaccca ggccctggct cagtcgggac agcagctgga gtggccagag gcctggcgcc     600
agcagcttgt ggacaagcat tccacagggg gtgtgggtga caaggtcagc ctggtcctcg     660
```

```
cacctgccct ggcggcatgt ggctgcaagg ttataaacca cctcctttcc agacgggagc    720
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caaagcctcc aagaccctac caaggcttct ccccaccctg ctccccagca cagttctccc    840
caccccgttc cccagcacag cgcttggggc ccctctggct ccagaccagg ccccttggag    900
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cactgggcct gggccgaaat catcagtgga actttgatta ggatcataaa atgggaagtt   1500
ggtcaaaatc acagatggct ggcggggcac ggtggctcac acctgtagtc ctagcacttg   1560
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ggcaaaaccc catctctaca aaatagttcg ctgcgtgtgg tggtgcacgc atgtggttcc   1680
agctactcag gaggctgagg caggaggatc acttgagcct gggaggtcta ggctgcagtg   1740
agccgggacg atgccactgc actccagcct gggcaacaga gtgagaccct gtcccagcac   1800
tctgggaggc agaggagccc agttggagat cagcctgggt aatatagtga aacttgatct   1860
ctacaaaaaa aaaa                                                     1874
```

```
<210> 536
<211> 704
<212> DNA
<213> Homo sapiens
```

```
<400> 536
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accgcgagga cgtcagcacc gagctgtacc gggcgctgga ggccgtgagg ctgcagaaca   120
gtgagggttc ctgtgagccg tgccctacgt cgtggctgcc cttcgggggc tcctgctact   180
atttctctgt gccgaagacc acgtgggcag aggcgcaggg ccactgcgcc gatgccagcg   240
cacatctggc gatgtagggg gcctggggga gcaggacttc ctgagtcgtg acactagtgc   300
ccttgaatac tggatcggcc gcaggccgt gcaacacctg cgcaaggttc agggctactc   360
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ggccacaggt tagactctag aggacatgtt ttgaggccga ggtgggcgga tcacctgagg   480
tcaggagttc aagaccagca tgggaaacgt ggcgaaaccc catctctact aaaaatacaa   540
aaaattagcc gggcgtggtg gcacacgcct gtaatcccag ctaaccctgg atgctgaggc   600
acgagaatca cttgaaccca ggaggcagag gttgcagtga ccgagattg cgccactgca   660
ctccagcctg ggagacagag ttagactccg tctcaaaaaa aaaa                    704
```

```
<210> 537
<211> 1058
<212> DNA
<213> Homo sapiens
```

```
<400> 537
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```

```
atggtcgggg cgctgtgcgg ctgctggttc cgcctgggcg gggcccgccc gctcatcccg      120
ttgggcccga ctgtggtaca gacctccatg agccggtccc aggtagccct gctgggcctg      180
agtctgctgc tcatgctcct actgtatgtg gggctgccag gccccctga gcagacttcc       240
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atcttttacc gcgaggtgct cccactcaac caggcacaca gggtggaggt ggtgctgctt      360
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cagaggggct accgggccgt ggcccttgac cttccaggtt ttgggaactc ggcaccttca      480
aaggaggcaa gcacagaggc agggcgggca gcgctgctgg agcgggcgct gcgggacctg      540
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cacaataaaa aagcatattt gtcctgccaa aaaaaaaa                               1058
```


```
<210> 538
<211> 1895
<212> DNA
<213> Homo sapiens
```


```
<400> 538
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tgcagagaag ggcctcagaa gcaagaggga agattgttgt ttataaccaa ccttacatca      660
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ggggcatttt ctttatatca cctcttaaaa acattgtttc cactttaaaa agttaaacac     1860
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```

```
<210> 539
<211> 2730
<212> DNA
<213> Homo sapiens
```

`ı`

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<400> 539
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<212> DNA
<213> Homo sapiens

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295

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<211> 5656
<212> DNA
<213> Homo sapiens



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297

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<210> 546
<211> 4146
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(4146)
<223> n = a,t,c or g

<400> 546
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298

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ggcccactga ctaagaagaa agtttatttt cgtgtgagat gccagcccct ccgggcaggc   3960
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tttcatgttt cttgnaccct ttttgtataa agctgcaata ttctctctta ttgttcnttt   4080
catatggaat gtaatttctc gtgccgaatt cctgcaggcn aatcaattaa aatccccccg   4140
gcgccc                                                              4146
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<210> 547
<211> 1348
<212> DNA
<213> Homo sapiens

<400> 547

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ggcacgaggg cagtgccctc acctgggcca gccactacca ggagagactg aactccgaac     60
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ccgagcctgg cgggtcagtg tgtggagggg agggactggg tggaggggaa ggcaggataa    180
tgcagtgggg ggcatggtgg agaggggaaa gggcccccttg actgaggggc tctgctccca    240
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atgtcagtga cctggagagt gtcacttcca aagagatccg ccaggctctg gagctgcgcc    360
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ctgaagggct ggagttgcag ttggcccagc tgtctggacc agatggggaa acaagcccag   1260
cagggcaaga tgattggtct aaggtcgcag ccaggtgaca gctgggtcac ttctcctccc   1320
actgtcactg ctgcctccat ctgacttg                                     1348
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<210> 548
<211> 1864
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1864)
<223> n = a,t,c or g

<400> 548

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ttaaccgaca tacagcacgt gggaggatgg tggaaaagct ggacatgact cactggacat    180
ttcaactgaa accacagagg ttcttgaaaa tgctggagaa ttccctgatt gccttatcag    240
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gacanccaat aggcacacga gatcctccat caaggggcgt tcccagtctg gggatcccca   1860
nggc                                                                 1864
```

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<210> 549
<211> 649
<212> DNA
<213> Homo sapiens
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<400> 549
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gggagccccc gccagaaggt gggcacctct gggagggagg gactgccagg ccttggggct    180
tcctgtgctg agtcagagct ggaacgggag acgcaggagc cccgcagccg cgggaggtgc    240
atatttgggg ctgccaggtg gcgccaggtc cccttggcca gcccccagcg cccctttctt    300
ctgtccccag ggcctcggct tcacaggatg gggctgccag tgtcctgggc ccctcctgcc    360
ctctgggttc tagggtgctg cgccctgctc ctctcgctgt gggcgctgtg cacagcctgc    420
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cagggcagtg cgacggcggc ggaagcggtg agtgccaagc tgtcccgggg accagggtgg    540
ggtccgcagg ggaccgacca gccttcctcg cccccagtcc ctactgaagc ggacccacct    600
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```

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<210> 550
<211> 696
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<212> DNA
<213> Homo sapiens




<400> 550
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cttttacagt aacttaatca atacagaact aaagccttta tagctattag aggggtttag   180
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cgctgccggg gctcatccca ggctccaacc ccaacctgga agcttgtgga caccaggctc   540
tgtgcagcag ctccgtggct agcgtccagg gcccctggcc actactccca aatgcttcta   600
gtccacccac ccctggccag ccccaacctt gacatcactg tggatgccat cagggtggtc   660
tggttcactt atacaacatg atccatgggc tcgtgc                            696




<210> 551
<211> 1037
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1037)
<223> n = a,t,c or g




<400> 551
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tagagcaact tatgactctc atctctgctg cacgagaata tgagatagag ttcatctatg   180
cgatctcacc tggattggat atcacttttt ctaaccccaa ggaagtatcc acattgaaac   240
gtaaattgga ccaggtttct cagtttgggt gcagatcatt tgctttgctt tttgatgata   300
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catgcatatc tgtccctttt tgcactcctc ccactcccat ctgggctctt atttcaagta   840
gtcagcatag aaagcttaac agtttttccc gtttttccttt ctttntgccc ctctggtttc   900
tttcattgaa aatattttag tctcttagtt gcttctcaaa attcaactta caggaagttt   960
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tatgtgagcc gagaacc                                                 1037




<210> 552
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      <212> DNA
      <213> Homo sapiens




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   aggggggagg gggccgggaa gggacctggc tggggaatga gaaaacctgg ggccatcgtc        180
   aacccagaga cttgggtttg caggtgaagg gtatcgggcc gtccatccct ctagcatgct        240
   tctcacgact tgcatcttta cccactagac ttctgcactg acccaggggc tggagcgaat        300
   cccagaccag ctcggctacc tggtactgag tgaaggtgca gtgctggcgt catctgggga        360
   cctggagaat gatgagcagg cagccagtgc catctctgag ctggtcagca cagcctgcgg        420
   tttccggctg caccgcggca tgaatgtgcc cttcaagcgc ctgtctgtgg tctttggaga        480
   acacacactg ctggtgacgg tgtcaggaca gagggtgttt gtggtgaaga ggcagaaccg        540
   aggtcgggag cccattgatg tctgagcctg ccggagggcg agggtcggag aagcggattg   .    600
   ggtcctgggc ctctgtgatg aggcaggcac acctgtcggt cttggcttgc tgctagaact        660
   agggccttct gctcgcccac ctcccacccc tacctggacg ggcccaggct tggggactct        720
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         <210> 553
         <211> 1451
         <212> DNA
         <213> Homo sapiens




         <400> 553
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   cgtagggcct gtttgcacct tcagatattg cctgctccca aaaattcaga cccccagatg       180
   cagggcaaga caataagaaa gggtgagtgc aagcaaggag agcctcctgc taagaggctg       240
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   cagaggctgc ctgtcgcccc ttcctcctcc ccttcttggg cactgtggga gcttctgggt       360
   cctgctggag gctggtcccc tcaggccgct gggttgcagt cctcttagga aggtctctct       420
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   caggactcag ctgtgtggcc ttggatttct ttttgcggga cttgcgccct gcaggacact       540
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   agggtggaga agggtgctgt agcccttgca ggcgtgaagt cctttctgct ctcttagcct       660
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   acctgccttg ggctacttcc actagctgca actctgggac gcatgggtgg ggagggatgt       960
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   caggttggga ggagtgggga gcctggttag acctggccca gacctcagct acacaagctg      1320
   atggactgag tcaggggcca cactctccct cctctggtga tgtgacctca gctggtttct      1380
   tcccactcgg ccatgggttt cccatcctgg agtgggatta agaatccttg tcctggccct      1440
   gtgcagtggc c                                                           1451
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        <211> 1663
        <212> DNA
        <213> Homo sapiens



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   gctatgtttg aaaatcgacg catgattaaa gcgatacttc tggaagcatg cagggcaggc     180
   ggcccggcca tgacgcacag actctgtaca gccctgcaga cctcagccac catgctaaca     240
   ggcggacact tttaccatgc aatcaagggc acgggatcag ctgctttggg aagacttatt     300
   tccacccct ccagtctctc aggctggagc gcagtggcgt gatctcaact cactgcaacc      360
   tctgcctcct aggttcaagc gattcttctg cctcagcctc ctgagtatgt gagactacag     420
   gcacgcacca ccacgcccag ctaatgtttg tattttttagc agagatggag tttcaccata    480
   ttggccaggc tggtctcgaa ctcccgatct cgtgatctgc ctgcctgggc ctcccaaaga     540
   gctgggatta caggcgtgag ccactgcgcc cagccaggaa gactttcttc atggcaaaca     600
   gtgggttctt tcaggggaca tttctgtaat gtacaaaaga acctgcaaaa acaaaagcac     660
   ctaggagac agaagactgg gaaaggccca tgaagggcag agctctctca gtaatggagg       720
   aaactaatag gactgctgct aatggagccc caggtgagcc ctgggattgc aaggccaccg     780
   ctggcacagg caaccatgct tgtgtggagg tgcaggcgtg agcccttctg caaggggggct    840
   ctctgccagc acccatgcag ggctcagaag ggggcctggc tgtggatctt gctgggttcc     900
   agcagcacag aggcccactg gcctctgacg caacatacgc ctggggaagt gtgcaggccc     960
   agcggagaca gaactgccaa gagtctggac tcacggtagt cttcagactc gtccaggatc    1020
   tcggacctga tgatctcctc gatcacgtcc tccagggtga ccaggcccag gacctcgtag    1080
   aaggggtcgc cttcaccctc gttgttcacc ttctgcacga tggccaggtg ggacttccct    1140
   gtggggggag gacactcatg gaacagcttg ctgggccccc cccagtttga ttcatctccc    1200
   ctggtatagg cccaccaaaa ggacacggct aacgttcatg ctcctacaac gtgccaggca    1260
   cagagccaca ctcttttcta ggttttttact taagactccc agcgtgatta tgagaactgg    1320
   ccttattttc acacaggttg aaaatgaagc agtgggctca tgcccatctg cacaaggccc    1380
   cccaggcaga gctggcagag ctgggatcca gctccaggtc cgtgcacctc catgacatgg    1440
   atgcagttta gacaaggatg cctccctcca gtggagaaca caaatgcctc acacatcagc    1500
   cagcctgcac atgcaggcta acaagggcac tgactctgga aacacaggct ctcctgcgac    1560
   agtccacacg gggcagctga gtggggccac ccagcctgac tgtccttggg aggatttcct    1620
   aagtcttttt cttcttaaag taaatatata tgctgtccat cct                      1663



        <210> 555
        <211> 1040
        <212> DNA
        <213> Homo sapiens



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   gagtgcgaga agcattccca accctggcag gtgcttgtgg cctctcgtgg cagggcagtc     180
   tgcggcggtg ttctggtgca cccccagtgg gtcctcacag ctgcccactg catcaggaag     240
   tgagtagggg cctggggtct ggggagcagg tgtctgtgtc ccagaggaat aacagctggg     300
   cattttcccc aggataacct ctaaggccag ccttgggact gggggagaga gggaaagttc     360
   tggttcaggt cacatgggga ggcaggggttg gggctggacc accctcccca tggctgcctg     420
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```
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ggagactagg gcaggagaat tgcttgaacc tgggaggcaa aggttgcagt gagccgagat    960
ccgtgccact gcactccagc ctgggtgaca gagtgagact ccgcctcaaa aagaaaaaa   1020
aaaaaagtct cgacggtcga                                             1040
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<210> 556
<211> 1331
<212> DNA
<213> Homo sapiens

<400> 556
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acataaacta tttgctgata tttactgagt gcttgcaatg tatcagagtc attaaataag    180
atgcaacttc tactgtgaaa actggaatct tcattaggac acagacttag aaaaggccca    240
gtttcaagga ttctgacttg cacagactga gcactcccat ttccagaagt tcgaatacct    300
cctttcttat ctcgggaatg tccatcattc tcctcaactt ctgatctctc cagttccagt    360
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cctggacctt tatgtgcttt gcaaataatt ttataacttt gccgtctcct ctgaatgctg    540
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atttatactt g                                                        1331
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<210> 557
<211> 971
<212> DNA
<213> Homo sapiens

<400> 557

305

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gagcgtgtgg cacatttggt ccattgtcat gtgcgggtat ggcaggagga gggggtaatc     180
tagaagcccc acatctaggg ccttctaggg acccagatat gcccccttag gcaaggctca     240
catgccaaag caaagcagat gaggtcagcc tggcttgggt tgagggctca gtgcctctta     300
gccttgccct ggggttcttg gaccttccgg aaactgagcc acatcaggct cacgttgata     360
gcataggtgg tgatacaaac aatgcagaaa tcatagagca cgaagaacag gatccaggcc     420
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aagcccgtca ggcaaagagc gagccgcacc cagccagggc tccccaggt gctgcccatt     780
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ggcgaatggc cgcgcccctc ctggcccctct gactcggcga ttggccggcc gtgctcgcac     900
tccacgaccc aaatggctgt tccagggcgc tagtcaagcg ggcgagttag gaaaacagcg     960
aagaatgccg g                                                          971
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            <211> 1575
            <212> DNA
            <213> Homo sapiens
```

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            cgatcccttc gcccccccagc tcggggacac gcagaactgc cagctgcggt gccgcgaccg     180
            cgacctcggc ccgcagcccc t cgcaggcggg gctggagggc gcctccgagt ctccctatga     240
            cagagccgtt ctgatcagcg cttgcgagcg tggctgccgc ctcttctcca tctgccgatt     300
            tgtggccaga agctccaagc ccaatgccac ccaaactgag tgtgaagcag cctgcgtgga     360
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            ttctccccat cccggtctcc agagacccag cttctgagag acagggtgtg ggcatctcca    1500
            tgcccctata aagcgtgcct ggggcttgtc tggggctggg gaggaataaa ccatgtatat    1560
            aaaagaaaaa aaaaa                                                     1575
```

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<210> 559
<211> 820
<212> DNA
<213> Homo sapiens


<400> 559
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gatgtttaat ttttttttaa caacattaac ttgtggcctc tttctacacc tggaaattta     780
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<210> 560
<211> 1601
<212> DNA
<213> Homo sapiens


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ttgaataatt ggcccacctg ggctgggatg agccagctgg atcacaccgt tgccccctca      180
gcctctagga ggcctcagga ttatggcgtc catcttatga tattggccga aaggagacag      240
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<210> 561
<211> 797
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(797)
<223> n = a,t,c or g

<400> 561
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ggcactatgg cttctcagag ccactcacct tctgctccgt tgtggacctc atcaatcact   180
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gagcgcttcc ggcgtgaggg caaccgacga aagagatgca aggatcctg ctgaactccg   660
agcggctcaa gtcccgcatt gcccgagatc catgagagcc ngcaccgaag ctgggagcag   720
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<210> 562
<211> 1772
<212> DNA
<213> Homo sapiens

<400> 562
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cgctctagga aaatgtgcta tgctcacctt ccctctaccc ctgtcccatc aggcccagag   120
ccaaggccat agggctgctg aatacacatg tgaggggggcc gaggggaaga caacagtacc   180
aggagggcag gcagggcacc cccaggctgg ccagtggagg ggtgggggta tcgatcccgc   240
cggggggctgg cttggttgct ggtgccctga gcccttctct gcccgcctgg gtgttgcctt   300
cactgatgga ggtaggcgtc cagccagatg tcaccagact tcttcaggga cctgacgatg   360
tccaccagcg cggtgaggaa gggcttcact tcgtagctga ggccgtgctt ggcacacagc   420
gacttgacca gcggggccac ccggctgtag ttgtgtctcg catcctggg gaagaggtgg   480
tgctcgatct ggaagttgag gtgcccgctg aaccagttgg tgaaaagtga gggctccacg   540
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ttggggatgt ggttcatctg tgtgatccac acgaaccagt ggctttccag gaccctgaca   660
gcaacaaaga agagcagcac cccagggacg ccgtagaagg ggaggtagga taagaagaag   720
cgggcataga agctggcggc ccagagcaaa tccgcccact gcatgcacac cagcatgtac   780

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```

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<210> 563
<211> 521
<212> DNA
<213> Homo sapiens
```

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tacctgaggg gaaggaagca caaaagggac ccgctgcaga ctcagggcaa agggaatgcc    180
atcggtgctg ggacctgtga gcactacagg aggaaacgcg agcgtggtgg gactggctcc    240
aggcacacag gcgaagggca agagggttgg acacgaagcc acaaagctac ttgggttcct    300
ccttcttctc gtttgccttt ttctgcttct gctgcatgat ctccgagtcc ctctgcttgc    360
gggcggcagc agaaagcccg tcatctcggc gctttccctt aaccgagtcg ctctgctttt    420
tcatattctt ctggcgggcg agctcacgct ggttaccgcg ggtcatggcg acggcagcgg    480
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```

```
<210> 564
<211> 840
<212> DNA
<213> Homo sapiens
```

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aagaatggag ttcaaacatg tctaaaccca gattcagcag atgtgaagga actgattaaa    300
aagtgggaga aacaggtcag ccaaaagaaa aagcaaaaga tgggaaaaaa acatcaaaaa    360
aagaaagttc tgaaagttcg aaaatctcaa cgttctcgtc aaaagaagac tacataagag    420
accacttcac caataagtat tctgtgttaa aaatgttcta ttttaattat accgctatca    480
```

```
ttccaaagga ggatggcata taatacaaag gcttattaat ttgactagaa aatttaaaac    540
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ttaaggccat gattttagca atacccatgt ctacacagat gttcacccaa ccacatccca    720
ctcacaacag ctgcctggaa gagcagccct aggcttccac gtactgcagc ctccagagag    780
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```

<210> 565
<211> 4345
<212> DNA
<213> Homo sapiens

<400> 565
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cattatctaa ctgtgaacct taccactctt cgagtatggt gttatgcttg cagcaaagaa    540
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aataatgact ttctttgtat tcatggaggt gttcctccaa gaaaagctgg ttatattgaa   2520
gacctggttt tgatgctgcc tcagaacatt tgggataacc tatatagcag gtatggtgga   2580
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atgtctttaa aatgcaaaaa aaaaa                                          4345
```

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<210> 566
<211> 984
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(984)
<223> n = a,t,c or g
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gccatggcgg gcgcgttggt gcggaaagcg cgggactatg tccgaagcaa ggatttccgg   180
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gccatcaatg atatgaaaaa gtctccagag attatcagtg gcggatgac atttgccctc   300
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atgtatatca tctattagaa tttacttaat gaaaaactga agagaacaaa atttgtaacc   780
actagcactt aagtactcct gattcttaac attgtcttta atgaccacaa gacaaccaac   840
```

```
agctggccac gtacttaaaa ttttgtcccc actgtttaaa aatgttacct gtgtatttcc      900
atgcagtgta tatattgaga tgctgtaact taatggcaat aaatgattta aatatttgtt      960
aaatgagtat gattaaaaaa aaaa                                             984
```

```
          <210> 567
          <211> 1775
          <212> DNA
          <213> Homo sapiens
```

```
          <400> 567
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cggtttggct gactggggag tcggcaggcg gcaggaacca tgcgaggcca gcggagcctg      180
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gcacaaataa aggtattcga tttttaaaaa aaaaa                                1775
```

```
          <210> 568
          <211> 1569
          <212> DNA
          <213> Homo sapiens
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aaaaaaaaa                                                               1569
```

```
<210> 569
<211> 1207
<212> DNA
<213> Homo sapiens
```

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ccggcggcgc  ccgacggagc  agaagagaga  gcatggagct  ggagaggatc  gtcagtgcag     180
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<210> 570
<211> 524
<212> DNA
<213> Homo sapiens




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tagccaggct tttgaaggca aacaacactc tcctgaagat gggctaccat tttgagcttc     180
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tccccttag tcaacgcagt gaaatgatga aaaagccatc gcaggccccg aagtacagga      480
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<210> 571
<211> 2219
<212> DNA
<213> Homo sapiens




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```

<210> 572
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<212> DNA
<213> Homo sapiens

<400> 572

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gagtgggcag ccagtctgcc ggggagggac acagaggcct tgttataaag tcatttactt    180
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aaacctcttg ccatctgatg gtgacttctg gattgggctc aggaggcgtg aggagaaaca    360
aagcaatagc acagcctgcc aggacctta tgcttggact gatggcagca tatcacaatt    420
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agaatctttt caaagcccac atatggtagc acaggttggc ctgtgcatcg gcaattctca   1620
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<210> 573
<211> 1612
<212> DNA
<213> Homo sapiens

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ctttcctaac ccaacccaac ctagcccagt cccagccgcc agcgcctgtc cctgtcacgg   180
accccagcgt taccatgcat cctgccgtct tcctatcctt acccgacctc agatgctccc   240
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cagagaatat agatgaaatt ttaaacaatg ctgatgttgc tttagtaaat ttttatgctg   360
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tcaggcaaca aaaaagtgac cccattcaag aaattcggga cttagcagaa atcaccactc   660
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ggtatactct attgagggat cgagatgagc tttaaaaact tgaaaaacag tttgtaagcc  1440
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tgtgtatttt tattttgaat aaacagaaag aaattttggg ttttaatttt ttttctcccc  1560
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      <210> 574
      <211> 928
      <212> DNA
      <213> Homo sapiens
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aaggggtgga cagtgagact cagcacagcc caaagtcaaa ggcattaggg ttgttctgaa   180
aatagagatt caagaagccc tggaaaatgc tcttatccat gagaagagca cagactgtgg   240
ggtcccactt catggctgat atccagagcc gcaggctgg cgtgtggctc acacagtcca   300
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cacaagcaat aacagattca tagatcagtt gacattggct ggtctccagg acaggaatgt   660
ggccaaaagg gtgctttgta tagtaccatt caggcttgtt tctcaggtta atgttgacca   720
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cagagcagcg atggagggg acaggaaag gagaggctag cggacgcgtg ggtcggcccg   900
ggaaaacggg tccaaccgag ggcgtcaa                                      928
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        <211> 1116
        <212> DNA
        <213> Homo sapiens




        <400> 575
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atgatctatg aagacattaa tacattaata agatacttaa gagttcatta taagctacaa     180
cactttgcaa ataagtatcc agtttaattg taacaaacca caatttgtga gcaaatttaa     240
gaatataaaa aacattaatt agttaaatac aattctctgg gaatatacat tatacctaca     300
gctgttttta cagtgagagt cttccttttt ttttcctttt aattatcaaa atggtaaatc     360
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        <210> 576
        <211> 3246
        <212> DNA
        <213> Homo sapiens

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<210> 577
<211> 2393
<212> DNA
<213> Homo sapiens

<400> 577

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atgatccagc tgcagaaccc taaccacccc acggggctac tgtgcaaggc caaccagatg    360
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<212> DNA
<213> Homo sapiens

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    <212> DNA
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      <212> DNA
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```

```
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```

```
<210> 583
<211> 405
<212> DNA
<213> Homo sapiens
```

```
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gcgtcgagtc agctgaaaga acactttgca cagttcggcc atgtcagaag gtgcatttta    180
ccttttgaca aggagactgg ctttcacaga ggtttgggtt gggttcagtt ttcttcagaa    240
gaaggacttc ggaatgcact acaacaggaa aatcatatta tagatggagt aaaggtccag    300
gttcacacta gaaggccaaa acttccgcaa acatctgatg atgaaagaa agattttga      360
gactgcagcc tattaataaa gttaacataa ctgagaaaaa aaaaa                     405
```

```
<210> 584
<211> 1802
<212> DNA
<213> Homo sapiens
```

```
<220>
<221> misc_feature
<222> (1)...(1802)
<223> n = a,t,c or g
```

```
     <400> 584
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cacttcttct caaacataaa ttgcaagtat cacagaaaat tgtaacaaca catgcaacac     180
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acgcgcccgc ccagcaagag actcagggta accgccatgt cgacgcaaac cagccttcag    1740
cagtcggcta ccctcgtgcc aagcttggcg tanaggtgtt caatacagtc tcatttgccg    1800
tc                                                                   1802
```

```
     <210> 585
     <211> 1106
     <212> DNA
     <213> Homo sapiens
```

```
     <400> 585
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ttgatgggac tgagaaacca gagttaaaac ctctttggag cttctgagga ctcagctgga     180
accaacgggc acagttggca acaccatcat gacatcacaa cctgttccca atgagaccat     240
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ccaggggcag gatagcctga agaaacatct acacgcagaa atcaaagtta ttgggactat     360
ccagatcttg tgtggcatga tggtattgag cttggggatc attttggcat ctgcttcctt     420
ctctccaaat tttacccaag tgacttctac actgttgaac tctgcttacc cattcatagg     480
accctttttt tttatcatct ctggctctct atcaatcgcc acagagaaaa ggttaaccaa     540
gcttttggtg catagcagcc tggttggaag cattctgagt gctctgtctg ccctggtggg     600
tttcattatc ctgtctgtca aacaggccac cttaaatcct gcctcactgc agtgtgagtt     660
ggacaaaaat aatataccaa caagaagtta tgtttcttac ttttatcatg attcactta     720
taccacggac tgctatacag ccaaagccag tctggctgga actctctctc tgatgctgat     780
ttgcactctg ctggaattct gcctagctgt gctcactgct gtgctgcggt ggaaacaggc     840
ttactctgac ttccctggga gtgtactttt cctgcctcac agttacattg gtaattctgg     900
catgtcctca aaaatgactc atgactgtgg atatgaagaa ctattgactt cttaagaaaa     960
aagggagaaa tattaatcag aaagttgatt cttatgataa tatggaaaag ttaaccatta    1020
```

```
tagaaaagca aagcttgagt ttcctaaatg taagctttta aagtaatgaa cattaaaaaa    1080
aacccattat ttcactgtca tttaaa                                         1106
```

```
        <210> 586
        <211> 1963
        <212> DNA
        <213> Homo sapiens




        <400> 586
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atgtggaagg tgattgtttc gctggtcctg ttgatgcctg gcccctgtga tgggctgttt     180
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aacagcaacc tcttcttctg gttcttccca gctcagatac agccagaaga tgccccagta     420
gttctctggc tacagggtgg gccgggaggt tcatccatgt ttggactctt tgtggaacat     480
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cagttttcc agatatttcc tgaatataaa aataatgact tttatgtcac tggggagtct     720
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gaggtgaaga tcaacctgaa cggaattgct attggagatg gatattctga tcccgaatca     840
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aagtacttcc agaagcagtg ccatgaatgc atagaacaca tcaggaagca gaactggttt     960
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gatcagcttt actatgtgaa atttttgtca ctcccagagg tgagacaagc catccacgtg    1140
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gacagtgaag tggctggtta tcccggcaa gcgggtgact tccatcaggt aattattcga    1440
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gaattacatt atttaactta aaggatgaaa ggtatggatg atgtgacact gagacaagat    1800
gtataaatga aattttaggg tcttgaatag gaagttttaa tttcttctaa gagtaagtga    1860
aaagtgcagt tgtaacaaac aaagctgtaa catcttttc tgccaataac agaagtttgg    1920
catgccgcga aggtgtttgg aaatattatt ggataagaat agt                     1963
```

```
        <210> 587
        <211> 1612
        <212> DNA
        <213> Homo sapiens
```

```
      <400> 587
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caggggtggg tcgggcatc cgagcgggtt tgacggaagg agcggcggcg acggaggagg      120
aggatggagg cggtggtgtt cgtcttctct ctcctcgatt gttgcgcgct catcttcctc      180
tcggtctact tcataattac attgtctgat ttagaatgtg attacattaa tgctagatca      240
tgttgctcaa aattaaacaa gtgggtaatt ccagaattga ttggccatac cattgtcact      300
gtattactgc tcatgtcatt gcactggttc atcttccttc tcaacttacc tgttgccact      360
tggaatatat atcgatacat tatggtgccg agtggtaaca tgggagtgtt tgatccaaca      420
gaaatacaca atcgagggca gctgaagtca cacatgaaag aagccatgat caagcttggt      480
ttccacttgc tctgcttctt catgtatctt tatagtatga tcttagcttt gataaatgac      540
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aatatatata tttctttgca caatttgtga aaccttataa gccattttcc ccaggtacaa     1140
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cctccacaat cacccccaaa cccagaaaat ccccactggc tcttgccagt ctggttttcg     1260
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tccttggagt tatattgtaa actcttgcag gtgggagagc agttcacctc cttagctctg     1560
tttgccagct cttacagggt aaaataaacc tgggcaattt atcctcaaaa aa           1612
```

```
      <210> 588
      <211> 1124
      <212> DNA
      <213> Homo sapiens
```

```
      <400> 588
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gccttacaag aaagacataa aatgtccaag ggatatttag aacattttag ttcttaaagc      180
ttcaacatga gaaatgttga ccacacactg tgaaatcatt tcaataaata acaactgaca      240
ttcatcttta cagttacaaa atagacacac atacatttcc ctgccgtcac attgatctta      300
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gagtgtgcaa gtagattcaa tcataacctt attttacaca taaaatatta acatagaatc      540
ttctaaaaca aacaaataaa taaataaata aataaataaa tagaagactt ctcctaagtg      600
atgctcaaac acattaggcg caatccaggt ggcctctgca gctgtgtctc tctttcctct      660
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ggggcggcg gagagcgtgg cgcgggccat ggggctcagc aggcggttcg agcggctgtg     1080
cgaggaggag agctggcaag gagctccgtg gcccgggctc tgtc                      1124
```

```
         <210> 589
         <211> 479
         <212> DNA
         <213> Homo sapiens




         <400> 589
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tcgtggctgc agtgagctat gattgtgcca ctgcactcca gtctggggga cagaatgaaa       120
ctgtctcaaa aagagtaaat gagaccccga gagttggagc agtgcccccct agtacacaga      180
aaagacaggg ctttgacacc ccctatctct ggtgttcttg gccctcaaca caggaaaaga       240
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acaccctgga ctcctacgag gacaagcaga aacttaagcg gaccgagatc atcagcccgt       420
tctgggttcc cttttgcccc ggaatccgcc tccaacagca aggtcagcgg cggcctgag        479




         <210> 590
         <211> 3015
         <212> DNA
         <213> Homo sapiens




         <400> 590
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taccagctct tcgaggagct tggcaagggt gctttctctg tggtccgcag gtgtgtgaag       120
aaaacctcca cgcaggagta cgcagcaaaa atcatcaata ccaagaagtt gtctgcccgg       180
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accttcgcag ccagtggctc tggagggcct gagtgacagc ggcagtcctg tttgtttgag      1680
```

```
gtttaaaaca attcaattac aaaagcggca gcagccaatg cacgcccctg catgcagccc    1740
tcccgcccgc ccttcgtgtc tgtctctgct gtaccgaggt gtttttttaca tttaagaaaa    1800
aaaaaaaaga aaaaaagatt gtttaaaaaa aaaaggaatc cataccatga tgcgttttaa    1860
aaccaccgac agcccttggg ttggcaagaa ggcaggagta tgtatgaggt ccatcctggc    1920
atgagcagtg gctcacccac cggccttgaa gaggtgagct tggcctctct ggtccccatg    1980
gacttagggg gaccaggcaa gaactctgac agagctttgg gggccgtgat gtgattgcag    2040
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cgcctagaat ggggctgatg agaacatcgt gaccatcaga cctacttggg agagaacgca    2160
gagctcccag cctgctgtgg aggcagctga gaagtggtgg cctcaggact gagagcccgg    2220
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cctctgccaa gtgcccctgt gggatgggag gagtgaggca gtgggagaag aggtggtggt    2640
cgtttctatg cattcaggct gcctttgggg ctgcctccct tcttattctt ccttgctgca    2700
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aaacaacgct gcaga                                                     3015
```

<210> 591
<211> 1414
<212> DNA
<213> Homo sapiens

<400> 591
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gattgctgtg gaattcctga gacgcggcgc aaacccaaaa atctacgaag gcgccgccag    180
aaaactcaat gtgagtagtg acactgtcca gcatggtgtg gaaggattaa cgtatctcct    240
cactgagagc tcaaagctca tgatttctga actggatttc caagactctg ttttttgttct    300
gggattctct gaagaattaa acaaattgtt gcttcagctt tatctggaca acagaaaaga    360
gatcagaacg attctgagtg aattgggcac caagccttcc cagttatcat aaccttgaat    420
ggcgactaga tgtacagctt gcaagtagaa gtctcaggca acagattaaa ccagcagtga    480
ctataaagct acaccttaat caaaatggag atcacaacac caaagttctg cagacagacc    540
cagccaccct gctccatttg gttcaacaac tggaacaagc attggaagag atgaagacaa    600
atcactgtag gagagttgtt cgcaacatca agtagtacca gttttaaggt tttaattcat    660
ttgaatcact tatgaattga tgatatacag caattacttt tcaaaattaa tttttttatta    720
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tctctactaa aaatataaaa aattagccag gtgtggtggc acgcatctat cagagtccca    960
gctactcagg aggctgaggc aggagaatcg cttgaacctg ggaggtggag gttgcagtga   1020
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ataaatagga ttgaatcaac tagaaatgaa tctatatgtt ctgtatatat gaatgactat   1320
cttgtttttg ctacttcttt tgactgctta attttattat tttcatcttt attgatcaaa   1380
tttcccaata aaattcacaa tgtaatacta aaaa                               1414
```

```
        <210> 592
        <211> 314
        <212> DNA
        <213> Homo sapiens




        <400> 592
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ccaccacaca tccaagaagg cagacgtggt tctggcgtgt ggcgactcta tcgtgcatcc       120
cgaggacctg atctgctgtc cgctgacggg gaggagttgc ctatgtgatg ttcatctact       180
ctcgtctctc ctagctcgtc tcggtagagg ttatgctgtc tctctgacta atctctagga       240
gttctgctgc cacgctcgtc tctgctgttg ctgctcttct gttggctctt gcgtactctt       300
cgacggcatc tctg                                                          314
```

```
        <210> 593
        <211> 2530
        <212> DNA
        <213> Homo sapiens




        <400> 593
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aacaaaagct cccacatgta aacaagaacg taaataagtt agatggcatt attatgtaca       120
ttcaagaatc aaaacatgtt ctggtaaaca ttccataatc cggtaaaatg ttttcaccca       180
tcactgttaa gagaaactgt gtattttata ctatcaataa caaaacctaa tctttgaaca       240
ttataaaatg gtttacggaa tataaactat acagtttacg ttttttcattc ctcctagcag       300
atccgtggtc acatgtatac tgagtcctaa gatgtatttt gtcagtatta gcccaaaatg       360
tccaccatcc caaattaacc aggttacaca tatctcctcc agtttttatg gtaggatgtg       420
ttagaaccca tatattacaa catcattttt caaaactaac ctaatcctaa attctattct       480
aactagtctg gcaatccttc atttttatctc cctgtctaca cattcattag ataccaaggc       540
aatttcacct taaaaaatac tgctaataca catttagata gtaatttctg gtaaaactgt       600
agtttatttta tcaaaaaatg tgaattttta ttttagaaat gtaggtcaag cattgtcata       660
gttgtagtac ttaattgaga ataatggctt caatttggaa gattcaatat acacattaaa       720
caaaattaaa cagtttaaat tataattcat ataattataa ttctcatttt tagatggcca       780
aaatatattg ttttcttact ataaagtgtt atttattcat cgtctatttt tactaattat       840
attcaattca cagtagtgac atcaaaggga caagtcatca taggtctgag accaggaaaa       900
cctggtctgt tttaacagag gcgtgtctaa aataagagta catatttcaa ttaggcccac       960
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aattctttc tgccagctga aataatttaa agatgtgcac aataggtctg tgctatttaa       1080
ggcaggtgtc aagcacattt tgaaatttac caactagaat gttctcctaa tggaaaaaga      1140
aaaaagaaaa gttatgacag ttttttgttta agacagatgt ttaaatagca ctcttctttt      1200
tgaccattta aaaataattt ggcagctgta accacctatg gtcataacac ataatcactt      1260
acaaaagaca agcaacagat acagaattaa cgatatactt ttaatatttt tacaaccctc      1320
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acataaactg acatgaagta aggaatataa tttctctgtg ccatgcaaaa gagaagtcaa      1440
cttttacac atcatcactc ctaaacagtt ctaattaaaa tccaaactgt tcccattttt      1500
gcatcattgt cattctttgg caaaagattc taaaaaccca ggggttagga aacaactgtt      1560
cactcatggt tttccttttt tttttttttg caaaatacat gtgttttgta aaagaaatct      1620
gcactgtgct tggtttatac tacataatta taagtaagca aaatagtatg acttcttttg      1680
actaatctac tcctaaagcc ttgagttgcc gttcaatctc ttcatctgag attgtagcct      1740
ttgaagtaga ggcagatggt aagcttcgag cagctgatgg agctttggcc atctttccag      1800
```

330

```
aaatttcaat tccaatttca tcaagaactt gattcacaat atcctggctt tcttcttcgt  1860
catcagaacc gtcaaagatg tcatcaagtg tatcattgat catttcttca gtcatttcca  1920
ttttcatgtt ttccttctgg aaattctgca tggtttgtaa tgtcttttgt ggatccatct  1980
tcttgttaac tgcctgcatt gttttttgctg tggtagacat tgctccagcc atcttcattt  2040
gggaattcat cacttttgtt tgtgtagaca tagaagtaac ttttgaactt acagcaaaag  2100
ttctcgtctt ctgtttccgt agatgcacaa gttgtttggc taaaactttg caagcttcct  2160
tattaccaat cttggccatt ttcttaattt ctaattccag ctgttttttct tgtttctcta  2220
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ggaccttggc gggttcgggg tggcggagcg gagagacagc aggaggaggt cggggtcgcc  2460
aggcaggacc cgcggaaggc ttgtatccgc agctaccgca gccgcgtcac ccggagctca  2520
ggtgaccggg                                                          2530
```


<210> 594
<211> 903
<212> DNA
<213> Homo sapiens

<400> 594
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aaaaaaccta gaaacaggtt gaattgaaac ctgtagatca ttttataata ttcatgagca   180
acaacttttt taaagacaaa ggctactgtt ttaatataaa ttaagagctt taacatgatc   240
tccctttagt gcttttaatt gtcacatggc tgtaaaccaa agacccctcc aaattttaaa   300
tgatcactga tactacttga gcagaaattc tcaggtgtca gtacttttaa tgttgtgtac   360
atcaaattac agtacaaaga tgactataaa caagatgcag ccctcggttt ccatgaacag   420
cacactatta cagtaaacca agtttatatt ccaccatcaa gtgtggctct cccatgactt   480
cgctttgtga tggatcatta agaatatcct caaatccaat agtctcatca ttacccctca   540
aaacatccag tgaaagattt gagcttgaaa gaaatggaag acgctgaacc tgctgcactg   600
ccttgaattc catctgtaat tttagcggag caaatagacc ctgaatgttt ctcagtgtgg   660
aaaaattcat tttatcttgg ttgagctgga aatttttttc tgataattca aggggatgac   720
taggcaaaag ttcattttc acacaagaaa aacctttccg aagaagatca tgactttcaa   780
aaggtccact tgctgaaagt tcagtaactg gaatactgtc ctttagctca gatccaagtc   840
ctctggcatt catcttccgc agctctgcga acagcctctc tgccccgtta ccgtcagtcg   900
acc                                                                 903
```


<210> 595
<211> 879
<212> DNA
<213> Homo sapiens

<400> 595
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cgcgggaccg tggcgcatgt ttcctgggag ttactgatca tcttctttga agaaacatga   120
agttacacta tgttgctgtg cttactctag ccatcctgat gttcctgaca tggcttccag   180
aatcactgag ctgtaacaaa gcactctgtg ctagtgatgt gagcaaatgc ctcattcagg   240
agctctgcca gtgccggccg ggagaaggca attgctcctg ctgtaaggag tgcatgctgt   300
```

```
gtcttggggc cctttgggac gagtgctgtg actgtgttgg tatgtgtaat cctcgaaatt      360
atagtgacac acctccaact tcaaagagca cagtggagga gctgcatgaa ccgatccctt      420
ctctcttccg ggcactcaca gaaggagata ctcagttgaa ttggaacatc gtttctttcc      480
ctgttgcaga agaactttca catcatgaga atctggtttc attttttagaa actgtgaacc      540
agccacacca ccagaatgtg tctgtcccca gcaataatgt tcacgcgcct tattccagtg      600
acaaaggtaa ctgccaacag ttgacttttt ccattccgcc ccctcatgtg gtctgtccat      660
gtaatctata aaacctatat aagaccatct tttggagcag ccttttggtt ttgaatttgt      720
atcatctttg ctttcaatat ttaatttttt cctttttact tatttatatt tgctaaaaga      780
ttacctactt tattattact ctacaaataa ccagcttttg cttttattgc ttggcttagt      840
tggctttttt aatttgcttt ttaaaattac tgttttttat                            879
```

```
        <210> 596
        <211> 816
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 596
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gggataaaac ttggagagaa gggccttggt gtggaggtgg agggactcct gtgggcttca      120
ctctggtagg aggagagcat cagggcaggc ctttaggctg ttgctctggg caggggtgg       180
gggtgcgggg gcttacagtg ggggccctta gttggcacag gttcggaagg gccccaggca      240
gacatgaatt ctcctgagac ttgaggtagg ttgcttcagc cagcccgggc ggagaagaag      300
ggcagagagc gaacatagga gtccagtcgg gagcgaaaga gctcactttg cacagtttgg      360
cccagcgggc acaggggatt cttcaccacc agctccacat acagcgcact gtagatgtgg      420
tgcagcacat ctcggatggg tcccacgccc aagtcagtat tcatgacaac tttgatccca      480
gtgggcgtct cgtagtaatg gagtttgtaa cggctagttt ggaaggccag gaagccatcc      540
ttcatgtcta gcggggacat cttgctgaca aacgagcgga tagagaagag catcccgtac      600
atcagcttat actcctcctc cttgggaatc cctgcttgct tcttgcggtg ccattcgctg      660
tagtgcagac acactccatt ccggtcaaac aggtacaggt tgtggacagt catctgcagg      720
gcagggagtg tgagcctcgc tccgggggccg cccccactcc ttgggctcgg gttcccggac      780
ccacagcctt ccaaccaggt ggggacccca cccacg                                816
```

```
        <210> 597
        <211> 1575
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 597
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cttccccaat ttgccacttc cagcagcttt agcccatgag gaggatgtga ccgggactga      180
gtcaggagcc ctctggaagc atggagactg tggtgattgt tgccataggt gtgctggcca      240
ccatctttct ggcttcgttt gcagccttgg tgctggtttg caggcagcgc tactgccggc      300
cgcgagacct gctgcagcgc tatgattcta agcccattgt ggacctcatt ggtgccatgg      360
agacccagtc tgagccctct gagttagaac tggacgatgt cgttatcacc aaccccca       420
ttgaggccat tctggagaat gaagactgga tcgaagatgc ctcgggtctc atgtcccact      480
gcattgccat cttgaagatt tgtcacactc tgacagagaa gcttgttgcc atgacaatgg      540
gctctggggc caagatgaag acttcagcca gtgtcagcga catcattgtg gtggccaagc      600
```

```
ggatcagccc cagggtggat gatgttgtga agtcgatgta ccctccgttg gaccccaaac     660
tcctggacgc acggacgact gccctgctcc tgtctgtcag tcacctggtg ctggtgacaa     720
ggaatgcctg ccatctgacg ggaggcctgg actggattga ccagtctctg tcggctgctg     780
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agccatgaag gccctgccg ccatccctgg atggctcagc ttagccttct actttttcct     960
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gactgtcagc tttatttagc tcacctagtg ttttcaagaa aattgagcca ccgtctaaga    1200
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ctggtccctg aggcgtctgg gtctctcctc tcccttgcag gtttgggttt gaagctgagg    1440
aactacaaag ttgatgattt cttttttatc tttatgcctg caattttacc tagctaccac    1500
taggtggata gtaaatttat acttatgttt caaaaaaaaa tcatcaactt tgtagttcct    1560
cagcttcagt cgacg                                                     1575
```

```
<210> 598
<211> 1166
<212> DNA
<213> Homo sapiens
```

```
<400> 598
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ggttgtggtg ggtcacagtg ttgctgacac ctctggcctc cagccctgca tccctaggca     120
ccatgtgacc aggcagtgag aaggacgggg cctcactccc atgccagact gctcctcggg     180
ctgagcagga cctgaagctc tcagggcttc caccaaagcc cagcaaactt ggggaggcc     240
tgaggggca tcagcagtcc ttaaaggcct gagcttgcaa cactcaggca ggactcggct     300
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ggaaccagtg ggtgccctga agggagggga ggcctcaggg agttcgggac aggagtgtgc      420
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ggacacattc catcttaggt ccaagagacg gaggtcagga gcatccctag aacgacctcc     540
caggcacgag gaaggcccgg ggcagggccg ggcgcagcgt ggctggcttc agtaccctcg     600
ggcatcttga ctcctgccct ctgggactgc aaagggatct gcgggcgcct ctgctgagtc     660
aatcgtctgg taggcactac ggtcctgaga agacccaagg aaaccagtgt ggaccaggag     720
ctcacccccg cgctcccggt acatgtggta gacgaagcag caggagagcg gcttgagcag     780
caagctgagg atggccatgc ccacgccaaa gcggcccgtg tccgtgaggc tgacccgcgg     840
gtagaagatg ctgatgtgca cgatgtccag gaagatggtg gccagcaagc cacccagaaa     900
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ggtgaagttg gcccaggcat aggagcctga gaatacaatg cagccccagg ttgtcagcag    1020
ccagtgacct aggagaatca ccttcaggtt cacagcaggc agctccatcc cgactcaggc    1080
cgagggcacc tgcgccgcag ccgcgggggg ctcctaggct ccgaactcgg ggaacaaact    1140
tgcccggccc cgccccgccc gttgcg                                         1166
```

```
<210> 599
<211> 716
<212> DNA
<213> Homo sapiens
```

```
<400> 599
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gaacgcggcc ctcagctccc tccggaagag gccccggggt caggggctgc agccgggtcc     180
ccgtgcgtcg gcccagctcg tccagcaccg ccttctcctt ctggaacatc tgctgccact     240
ctgcctccgt gccgtgtgtg aatcccagca agtgacagag tccgtgggtg gccgtcacag     300
tcaggacgtc attgtaatct tcattttctt tacactgatg gaagatatac tccactccta     360
ggaaaatgtc tcccaaattg tagtcatctg gaaaatcagg ctggggaaat tcacctgctt     420
tcagatgctc atgaaatgga aaagaaagca catcggttgg gacatttcta tctctgtaga     480
ttctattaat gtgctgaata ttcttgttgt caacacagat gatccccagg tcaaatttct     540
gcactcctaa aatcctcctt acaatctcga tcttactgcg aagtggcgct ctcctgatgg     600
ggatgactcg ctgcagattt ctaatcacca aactcatttc aggaagaata accagccctt     660
taaaaatgtt tgcaacggaa ccggtgtctg gacccagcaa aggacgcgaa gctggc        716
```

```
<210> 600
<211> 802
<212> DNA
<213> Homo sapiens
```

```
<400> 600
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gacttcctga accccactat catgcggcag gtgttcctgg gaaacccaga caagtgccca     120
gtgcagcagg ccagcttgaa ccacttggaa gcaaaacaga gaccctggac ctgagagcag     180
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actacacgta ccccatcaag ccagccattg agaactgggg cagtgacttc ctgtgtacag     300
agtggaaggc ttccaatagt gttccaacct ctgtccacca gctccgacca gcagacatca     360
aagtggtggc cgccctgggt gactctctga ctacagcagt gggagctcga ccaaacaact     420
ccagtgacct acccacatct tggagggac tctcttggag cattggaggg gatgggaact     480
tggagactca caccacactg cccaacattc tgaagaagtt caacccttac ctccttggct     540
tctctaccag cacctgggag gggacagcag gactaaatgt ggcagcggaa ggggccagag     600
ctagggacat gccagcccag gcctgggacc tggtagagcg aatgaaaaac agccccgaca     660
tcaacctgga gaaagactgg aagctggtca cactcttcat tgggggcaac gacttgtgtc     720
attactgtga gaatccggag gcccacttgg ccacggaata tgttcagcac atccaacagg     780
ccctggacat cctctctgag ga                                              802
```

```
<210> 601
<211> 859
<212> DNA
<213> Homo sapiens
```

```
<220>
<221> misc_feature
<222> (1)...(859)
<223> n = a,t,c or g
```

```
<400> 601
```

```
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ccagcttcta agtgccagat gatggaggag cgtgccaacc tgatgcacat gatgaaactc   120
agcatcaagg tgttgctcca gtcggctctg agcctgggcc gcagcctgga tgcggaccat   180
gcccccttgc agcagttctt tgtagtgatg gagcactgcc tcaaacatgg gctgaaagtt   240
aagaagagtt ttattggcca aaataaatca ttctttggtc ctttggagct ggtggagaaa   300
ctttgtccag aagcatcaga tatagcgact agtgtcagaa atcttccaga attaaagaca   360
gctgtgggaa gaggccgagc gtggctttat cttgcactca tgcaaaagaa actggcagat   420
tatctgaaag tgcttataga caataaacat ctcttaagcg agttctatga gcctgaggct   480
ttaatgatgg aggaagaagg gatggtgatt gttggtctgc tggtgggact caatgttctc   540
gatgccaatc tctggcttga aaggagaaga cttggattct caggttggag taatagattt   600
ttccctctac cttaaggatg tgcaggatct tgatggtggc aaggagcatg aaagaattac   660
tgatgtcctt gatcaaaaaa attatgtgga agaacttaac cggcacttga gctgcacagt   720
tggggatctt caaaccaaga tagatggctt ggaaaagact aactcaaagc ttcaagaang   780
agtttcagct gcaacagacc gaatttgctc acttcaagaa gaacagcagc agttaagaga   840
acaaaatgaa ttaattcga                                               859
```

<210> 602
<211> 2047
<212> DNA
<213> Homo sapiens

<400> 602

```
tcaataccgc gtccgcgccc aggcggctgc ccgtgacctg cctgggcgcg gggaactgaa    60
agccggaagg ggcaagacgg gttcagttcg tcatggggct gtttggaaag acccaggaga   120
agccgcccaa agaactggtc aatgagtggt cattgaagat aagaaaggaa atgagagttg   180
ttgacaggca aataagggat atccaaagag aagaagaaaa agtgaaacga tctgtgaaag   240
atgctgccaa gaagggccag aaggatgtct gcatagttct ggccaaggag atgatcaggt   300
caaggaaggc tgtgagcaag ctgtatgcat ccaaagcaca catgaactca gtgctcatgg   360
ggatgaagaa ccagctcgcg gtcttgcgag tggctggttc cctgcagaag agcacagaag   420
tgatgaaggc catgcaaagt cttgtgaaga ttccagagat tcaggccacc atgagggagt   480
tgtccaaaga aatgatgaag gctgggatca tagaggagat gttagaggac acttttgaaa   540
gcatggacga tcaggaagaa atggaggaag aagcagaaat ggaaattgac agaattctct   600
ttgaaattac agcaggggcc ttgggcaaag cacccagtaa agtgactgat gcccttccag   660
agccagaacc tccaggagcg atggctgcct cagaggatga ggaggaggag gaagaggctc   720
tggaggccat gcagtcccgg ctggccacac tccgcagcta ggggctgcct accccgctgg   780
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agtatagaca gatatatctt attgtgggga ggggaaagaa atccatctgc tcatgaagca  1020
cttctgaaaa tataggtgat tgcctgaatg tcgaagactc tactttgtc tataaaacac  1080
tatataaatg aattttaata aattttttgct ttagcacttg gccccattgt agattgccct  1140
gtgcagtaaa ctttcaaggt gtcggctgcc ccagattgct tcatttgctg ggtgtggaaa  1200
gagttgctat ggccaggcat atgggatttg gaagctcagc agaagtgact tctgctctgt  1260
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caagaggatg ctggggaatt gtgctgcttg tcctgttggc tggtggctgc attatgtcct  1380
ggggtgtgca tgtgggtcta tttagagctt ctgtcccttc cttcccattg caagttgcac  1440
ccagatgaga cagctgtagt actaggtctc tttcacctct cattgcctgt ccctgcttcg  1500
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gctgaccagg agcacactaa ggtgtggtca tgcatcataa ccaacattca ctcatctggg  1620
acattcttaa gatacattta taaatcattt cagcagtagt actttgtatg tgttgagagt  1680
ttacagagct ctttgacata cgcgatctta gtctttacaa ataaggaaaa cagctcagtt  1740
tgggaagtat cagagatggg attcaaaccc agatcctctg tccaagttg tatgtgcact  1800
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tagcaaaatc ctgaaacaat ggggtccttc cagtctcatc atacaaaatg gcaatcttgg  1920
ctgggtgcgg tggttcatgc ctataatccc agtgctttac aaggctgagg caggaggctc  1980
tcttgagaat aggagttcaa gaccagcctg gcaacatag caagatcctg tctctccaaa  2040
```

335

aaaaaaa   2047

        <210> 603
        <211> 1927
        <212> DNA
        <213> Homo sapiens

        <400> 603
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tgattccaat ccagggcggg atcctgaacc tgaacaagat ggtcaagcaa gtgactggga   120
aaatgcccat cctctcctac tggcccctacg gctgtcactg cggactaggt ggcagaggcc   180
aacccaaaga tgccacggac tggtgctgcc agacccatga ctgctgctat gaccacctga   240
agacccaggg gtgcggcatc tacaaggact attacagata caacttttcc caggggaaca   300
tccactgctc tgacaaggga agctggtgtg agcagcagct gtgtgcctgt gacaaggagg   360
tggccttctg cctgaagcgc aacctggaca cctaccagaa gcgactgcgt ttctactggc   420
ggccccactg ccggggggcag accccctgggt gctagaagcc cacaccctct accctgttcc   480
tcagcatgga gctctggcat ccccacctca gtatctaacc tgaaccagcc tggctttta   540
aacactccgg ggggaggtag tcccagcctc cccggaacc ctctaccaat gccttctgac   600
cttctgaagc tttccgaatc ctcccagttg aggcagtagc tgtgtcctct gagggtggat   660
gggaatcttg ggagaagccc aagcaaggga gccctcagag gtggtgtttg gaccaaagca   720
tcggggtggg ggaggggtct gccgctgtcc cccacctgct ggcccccttg tccttcctca   780
ccccctccaa tatagtctcg gagctacaac cgcagcagcc actataaagg gcaatattga   840
tctttctgtc catgtggctc tatcttttaa aacctcaagg ccctccactg tcctaagata   900
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aagctctgaa gtccctgcag gtggaggcca tgcctgtctt aaactcagtt gcatccctgg   1020
tgcccaaagc aacaccagaa ccaagaagga gctccataaa tccttcttgg gtgaagccta   1080
gacaaagccg ccaggtcttg tggctccagg caccagagcc ttgagtactt tctcctgcct   1140
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actgatcccc acctcctcag ggtcaaaggg ctactttctg gaagtctccc caggctgact   1260
ccttctccct gactgcaagg gctcactccc tcctccaagc tcccacaatg cttcatggct   1320
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aggttgcagc agatggtgtg ggtacctcac ccagatatct tccaggccca aggcccctct   1560
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ctgtcactca tggccaggag agtgacacca tggagggtac aattgccagc tcccccgtgt   1740
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ccaggcctct cctggaacca cctctctgct tggtctgacc ccttggccta tccagttttc   1860
ctggttccct cacaggtttc tccagaaagt actccctcag taaagcattt gcacaagaaa   1920
aaaaaaa   1927

        <210> 604
        <211> 630
        <212> DNA
        <213> Homo sapiens

        <400> 604

336

```
caaccccgcc gccggggaca tgtccaaccc ctgaagccgg aggaacgggc cagtcagact          60
gcgcccgaca ggtatattga aaagtctgat tcagttacaa tcagtgtatg gaatcacaag         120
aagatccata agaaacaagg tgctggattt ctccgttgtg ttcgtctttt tccagtgcca         180
tcaaccacct caaagacact ggttatcaga ggttggattt atgcaaactt gggccaaagg         240
acagttagaa gacagtagct gaagaagcat ctgtagggaa tccagaagga gcattcatga         300
agatgttaca agcccggaag cagcacatga gcactgagct gactattgag tcggaggcgc         360
cctcagacag cagtggcatc aacttgtcag gctttgggag tgagcagcta gacaccaatg         420
acgagagtga tgttagcagc gcactaagtt acatcttgcc ttatctctca ctgagaaatc         480
taggtgcaga atcaatattg ttaccgttca ctgaacagct attttcaaat gtacaagatg         540
gagataggct cctgagtatt ttgaaaaaca atagaaagag cccctcacag tccagccttc         600
taggtaacaa atttaaaaac aaaatatttg                                          630
```

```
        <210> 605
        <211> 783
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 605
tctgcctctg accctccttc tcgctgctcc ctttgcccat ctgctcctcc cacctggcca          60
tgaccaaagc ccgtgctggc accctggccc agctctgagt cctgggaccc tcggtcctct         120
ctcctgggcc atggccaact caggcctcca gctcctgggc tacttcttgg ccctgggtgg         180
ctgggtgggc atcattgcta gcacagccct gccacagtgg aagcagtctt cctacgcagg         240
cgacgccagc atccagctga ggtccaaggt ctttgtccta gaatcagagt ggggagggga         300
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catcacagaa cctccccttc cctgccacgc accttccttg gccagctcca ttctggcctc         660
ctccaccacc tgccttgtga ccacatctcc caccacgtcc ccagatctca agaacgcagc         720
tcagcttctc cttcgagctt gactcttaag agggaaaagt gacggaaacc aattcagatg         780
aag                                                                       783
```

```
        <210> 606
        <211> 2513
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 606
cgacccacgc gtccggccgc cgctgctaca gccgccgccg ccgctgttgc cgcggcttgt          60
tattcttaaa atggcgccgc tagacctgga caagtatgtg gaaatagcgc ggctgtgcaa         120
gtacctgcca gagaacgacc tgaagcggct atgtgactac gtttgtgacc tcctcttaga         180
agagtcaaat gttcagccag tatcaacacc agtaacagtg tgtggagata tccatggaca         240
gttttatgac ctttgtgaac tgttcagaac tggaggtcag gttcctgaca caaactacat         300
atttatgggt gattttgtag acagaggtta ctatagtttg gagaccttca cttaccttct         360
tgcattaaag gctaaatggc ctgatcgtat tacacttttg cgaggaaatc atgagagtag         420
acagataaca caggtctatg gattttatga tgagtgccaa accaaatatg gaaatgctaa         480
tgcctggaga tactgtacca agttttttga catgctcaca gtagcagctt aatagatga          540
```

```
gcagattttg tgtgtccatg gtggtttatc tcctgatatc aaaacactgg atcaaattcg      600
aaccatcgaa cggaatcagg aaattcctca taaaggagca ttttgtgatc tggtttggtc      660
agatcctgaa gatgtggata cctgggctat cagtccccga ggagcaggtt ggctttttgg      720
agcaaaggtc acaaatgagt ttgttcatat caacaactta aaactcatct gcagagcaca      780
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aaatacaaga gaaccaaagt tattccgggc agtccagat tcagaacgtg ttattcctcc        960
cagaacgaca acgccatatt tcctttgagg ccttcgccca tcctgctgac ccattttttct     1020
gccctcttct taccccaatt ttcttgtatt accctctaca atatactttt tattgagcac      1080
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gtttatatcc tctatagtaa tagaaaaaca tttaatactt gtaatgctga tgtgttaatt     1920
tgataccagt tgagtagaat gtgatcaatc cagtttacaa tctatcatga gtattattaa     1980
ctaaaatcta tgtgcttttc aataggaatc attcttctct tgctgtaaca cttgacctta    ·2040
acttttagaa agtgttcatt tttaaactgc aactggaaag gttgaaaagt taggactctt     2100
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tatctcttat gactgtagtc ataaatgatg ttggaatgta cattttgtga aatagttggt     2340
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ataaagcact ttagcatctg ttcaggtagt tttgaaaacc aactttttccc cttcaggata     2460
agaacttcca ggttacctaa aaatgcaata aaaatcttta tagtctaagc ttt            2513
```

```
        <210> 607
        <211> 768
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 607
gattattaaa gcttcgccgg agccgcggct cgtccttcca ctccgccagc ctccgggaga       60
ggagccgcac ccggccggcc cggccccagc cccatggacc tccgagcagg ggactcgtgg      120
gggatgttag cgtgcctgtg cacggtgctc tggcacctcc ctgcagtgcc agctctcaat     180
cgcacagggg acccagggcc tggcccctcc atccagaaaa cctatgacct caccgctac       240
ctggagcacc aactccgcag cttggctggg acctatctga actacctggg cccccctttc     300
aacgagccag acttcaaccc tccccgcctg ggggcagaga ctctgcccag ggccactgtt     360
gacttggagg tgtggcgaag cctcaatgac aaactgcggc tgacccagaa ctacgaggcc     420
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cgccgcagcc tggcccactt ctgcaccagc ctccagggcc tgctgggcag cattgcgggc     540
gtcatggcag ctctgggcta cccactgccc cagccgctgc ctgggactga acccacttgg     600
actcctggcc ctgcccacag tgacttcctc cagaagatgg acgacttctg gctgctgaag     660
gagctgcaga cctggctgtg gcgctcggcc aaggacttca accggctcaa gaagaagatg     720
cagcctccag cagctgcagt caccctgcac ctggggggctc atggcttc                  768
```

```
         <210> 608
         <211> 698
         <212> DNA
         <213> Homo sapiens




         <400> 608
cacagataaa gataagtttt actgtcatgc tgcttttaac ataacagagc aacatcacct        60
aggaaaaaag tttgtaggag gatttttaat ccatatattt gtcttatggc tagataaaga       120
tttctctgaa aaaaagaagc atgtcaggaa tctctgggtg cccctttttc ctctggggac       180
ttctagcatt gttgggcttg gctttggtta tatcactgat cttcaatatt tcccactatg       240
tggaaaagca acgacaagat aaaatgtaca gctactccag tgaccacacc agggttgatg       300
agtattatat tgaagacaca ccaatttatg gtaacttaga tgatatgatt tcagaaccaa       360
tggatgaaaa ttgctatgaa caaatgaaag cccgaccaga gaaatctgta aataagatgc       420
aggaagccac cccatctgca caggcaacca atgaaacaca gatgtgctac gcctcacttg       480
atcacagcgt taaggggaag cgtagaaagc ccaggaaaca gaatactcat ttctcagaca       540
aggatggaga tgagcaacta catgcaatag atgccagcgt ttctaagacc accttagtag       600
acagtttctc cccagaaagc caggcagtag aggaaaacat tcatgatgat cccatcagac       660
tgtttggatt gatccgtgct aagagagaac ctataaac                              698
```

```
         <210> 609
         <211> 1256
         <212> DNA
         <213> Homo sapiens




         <400> 609
ggtggaattc cacccccagc gggcgcgggc cggagcacgg gcacccagca tgggggtact        60
gctcacacag aggacgctgc tcagtctggt ccttgcactc ctgtttccaa gcatggcgag       120
catggcggct ataggcagct gctcgaaaga gtaccgcgtg ctccttggcc agctccagaa       180
gcagacagat ctcatgcagg acaccagcag actcctggac ccctatatac gtatccaagg       240
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gaggtctggg ctgaacatcg aggacttgga gaagctgcag atggcgaggc cgaacatcct       480
cgggctcagg aacaacatct actgcatggc ccagctgctg gacaactcag acacggctga       540
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ttttcagcgc aagctggagg gctgcaggtt cctgcatggc taccatcgct tcatgcactc       660
agtggggcgg gtcttcagca gtggggggga gagcccgaac cggagccgga gacacagccc       720
ccaccaggcc ctgaggaagg gggtgcgcag gaccagaccc tccaggaaag gcaagagact       780
catgaccagg ggacagctgc cccggtagcc tcgagagcac cccttgccgg tgaaggatgc       840
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ctgttcccct ctgctactag ccactgagaa gtgcacttta agaggtggga gctgggcaga       960
cccctctacc tcctccaggc tgggagacag agtcaggctg ttgcgctccc acctcagccc      1020
caagttcccc aggcccagtg gggtggccgg gcgggccacg cgggaccgac tttccattga      1080
ttcaggggtc tgatgacaca ggctgactca tggccgggct gactgccccc ctgccttgct      1140
ccccgaggcc tgccggtcct tccctctcat gacttgcagg ccgttgccc ccagacttcc      1200
tcctttccgt gtttctgaag gggaggtcac agcctgagct ggcctcctat gcctca         1256
```

```
        <210> 610
        <211> 417
        <212> DNA
        <213> Homo sapiens




        <400> 610
ggacttcccg ggtcgacgat ttcgtctcgt ctggctgctc gtgctccggc tgccctggcg      60
ggtgccgggc cagctggacc ccaccactgg ccggcggttc tcggagcaca aactctgcgc     120
ggacgacgaa tgcagcatgt taatgtaccg cggggaggct cttgaagatt tcacaggccc     180
ggattgtcgt tttgtgaatt ttaaaaaagg ggatcctgta tatgtttact ataaactggc     240
acgaggatgg cctgaagttt gggctggaag tgttggacgc acttttggat attttccaaa     300
agatttaatc caggtagttc atgaatatac caaagaagag ctacaagttc caacaaatga     360
gacggatttt gtttgttttg atggaggaag agatgatttt cataattata atgtaga       417
```

```
        <210> 611
        <211> 886
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(886)
        <223> n = a,t,c or g




        <400> 611
tttttatttt tttgcttttt aaaagttttt atttcaaaaa ataaagctgc agttcatttc      60
acataaatat ctggggaggg aagggagtg ggatggggtg ggggcttggc ccctacctcc     120
tcttctcttt cacactgtat tgtaaaagca aaggggatgg cttgccgaac cagcgggaga     180
gccatatctg cttcattgtc atgtgatcag ggagaacttc attgtcaaaa aggagctgca     240
catgctgagg gtttagcatc aagcggtgac acaggaccct cggagatgg cgtacctcag     300
ctctaacaga acatcggaca tacttgttct gcaggacgct tttattcttg tctttgccag·    360
aactcagccg ctccaggcac aggttcaact gctcatcata gcgatagtag tgggctttag     420
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```

```
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        <211> 597
        <212> DNA
        <213> Homo sapiens
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caggtgaccc gcagcgttgc gtttgtccag aagcggtatc caagcaacaa gctttttcct     540
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```

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        <211> 1163
        <212> DNA
        <213> Homo sapiens
```

```
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cctttccagg gagaaaaaaa aaa                                            1163
```

```
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        <211> 2428
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 614
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341

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accacttttt aagtgacctt tggtcacaaa tgtcaaaatg tttccacacc ctttccaccc   180
tcaaacaaga gacaaactgt ttttgataaa ctctagtatt tattaaatta taaattttgt   240
aatcaaaaag aaaaatgcag accaaaaaaa cctcaaacta taagactaga cagcaaagcc   300
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atttccattt caataacttt actataaaat agttgttatt catctatttt gaaatcccaa   420
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```


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        <211> 5653
        <212> DNA
        <213> Homo sapiens



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tccccctttgg tcaaggtgtc ccacacattc ccactgcagc tccagcaca gcggcgcacc    180
atgaactcgg acgcggagcc caaggaatgg agatcgcacc agccttccct gcttccccac    240
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cctcggggat ctccggctcc ccgacctaca caagcagcag cagcagcagc agcgagtcct    420
gccaacgccg cagtagctgc tcatgagaaa agtgcccacg ctccccaagc cctcctgttt    480
```

```
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343

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<212> DNA
<213> Homo sapiens

<400> 616
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<210> 617
<211> 381
<212> DNA
<213> Homo sapiens

<400> 617

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tttcctgccc tatcacacac t                                             381
```

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        <211> 1477
        <212> DNA
        <213> Homo sapiens



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        cactgataaa tgcaatagat acaggaagat ttccacggtt gctcactcgg attcttcaaa   180
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```

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        <211> 917
        <212> DNA
        <213> Homo sapiens



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        <213> Homo sapiens
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<210> 623
<211> 1080
<212> DNA
<213> Homo sapiens


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<210> 627
<211> 1906
<212> DNA
<213> Homo sapiens

<400> 627

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<210> 628
<211> 1775

<212> DNA
<213> Homo sapiens

<400> 628

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<210> 629
<211> 1114
<212> DNA
<213> Homo sapiens

<400> 629

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cctcctcctc ctccgggtcc ccgcccagca cccctcgcac caggcggcgg cggcggagga    180
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gtgctgctgc  ttatcctatt  tctatatggt  ctctgcttgg  ggtggttatg  tatttatcat     1020
caatcttatt  ccactgcatg  catttgtgtt  ggtactgatg  cagatacagc  aaaagagtct     1080
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<210> 630
<211> 851
<212> DNA
<213> Homo sapiens
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<400> 630
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tgctggcagg  ggttgtggtc  ctgttgagca  gaggagcgac  gccgctgccc  tggccccgc       180
tgtccctatg  atcctgcact  ctggggtggg  agctacatat  catccttgga  caccaggcag      240
tagaagtctg  tgcgggcact  gtagtttcgc  gagccgagat  ccgagacgtc  cacttcgctg      300
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acaggccccc  ggacacccag  gtcgccctca  gggtccgggt  ccacctctga  gtccagggcc      420
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cggggcggga  ccgtcagggg  ggtgggtgct  acgctggggc  ccacccaacc  ccgcgcggga      780
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<210> 631
<211> 1320
<212> DNA
<213> Homo sapiens
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<400> 631
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tggagaaggt  tttcaacgga  cttagcaaca  tggggagcca  caccggcaag  gagttggaca      600
aaggcgtcca  ggggctcaac  cacggcatgg  acaaggttgc  ccatgagatc  aaccatggta      660
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<210> 632
<211> 3149
<212> DNA
<213> Homo sapiens

<400> 632
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354

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<210> 633
<211> 1841
<212> DNA
<213> Homo sapiens

<400> 633
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<210> 634
<211> 1324
<212> DNA
<213> Homo sapiens

<400> 634

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gaggccctgt aattggaatg agtccacttt aaatccttta acgaggatcc attggagggc     180
aagtctggtg ccagcagccg cggtaattcc agctccaata gcgtatatta aagttgctgc     240
agttaaaaag ctcgtagttg gatcttggga gcgggcgggc ggtccgccgc gaggcgagcc     300
accgcccgtc cccgccctt gcctctcggc gccccctcga tgctcttagc tgagtgtccc      360
gcggggcccg aagcgtttac tttgaaaaaa ttagagtgtt caaagcaggc ccgagccgcc     420
tggataccgc agctaggaat aatggaatag gaccgcggtt ctattttgtt ggttttcgga     480
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attcttggac cggcgcaaga cggaccagag cgaaagcatt tgccaagaat gttttcatta     600
atcaagaacg aaagtcggag gttcgaagac gatcagatac cgtcgtagtt ccgaccataa     660
acgatgccga ccggcgatgc ggcggcgtta ttcccatgac ccgccgggca gcttccggga     720
aaccaaagtc tttgggttcc ggggggagta tggttgcaaa gctgaaactt aaaggaattg     780
acggaagggc accaccagga gtggagcctg cggcttaatt tgacccaaca cgggaaacct     840
cacccggccc ggacacggac aggattgaca gattgatagc tctttctcga ttccgtgggt     900
ggtggtgcat ggccgttctt agttggtgga gcgatttgtc tggttaattc cgataacgaa     960
cgagactctg gcatgctaac tagttacgcg accccgagc aggagaacag cactgtaggc     1020
atgaagatcc aggaggagct gcaacgttcc ggggcctgg accacctcgt actctcacca     1080
ggagaatggc ccgtgagtga caacaccatc atgcacatcg caaccgccga ggccctcacc     1140
acagactact ggtgcctgga tgatctgtac cgggagatgg tgagatgcta tgtggaaatc     1200
gttgagaagc ttccagaacg ccggccagac ccagctacca ttgaaggctg tgctcagcta     1260
aagcccaata actaccttct cgcctggcac acaccgttca atgaaaaagg ctcagggttt     1320
ggag                                                                 1324
```

<210> 635
<211> 519
<212> DNA
<213> Homo sapiens

<400> 635

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cccacgcgtc cggagcactt tatttttttt caagttattt tttgcattgt tttggagtag      60
cttcgaataa taaacacata tttctgcttt aaattttaa tagttaacta cattcatggg      120
acaaccaaag caagaaagcc tcatgttttg ggggaaagtt tgatatcagc aatgtccaga     180
caagagccaa agatgtttgt cttgctctat gttacaagtt ttgccatttg tgccagtgga     240
caaccccggg gtaatcagtt gaaaggagag aactactccc ccaggtatat ctgcagcatt     300
cctggcttgc ctggacctcc agggcccct ggagcaaatg gttccctgg gcccatggt       360
cgcatcggcc ttccaggaag agatggtaga gacggcagga aaggagagaa aggtgaaaag     420
ggaactgcag gtttgagagg taagactgga ccgctaggtc ttgccggtga gaaagggga     480
caaggagaga ctgggaagaa aggacccata ggaccagag                           519
```

```
<210> 636
<211> 1396
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1396)
<223> n = a,t,c or g



<400> 636
ttgaaaccag caccttccct ttctctgagt cctgcctcct tctgcagaag ggagctcaaa       60
agaactttgt tgttttgcct tttactctgg ggtgaaagcg gcaggaggta tgtgagatgg      120
tgaaatgatt tgcttctgcc atgctggggt cacgggtgga tcgccctaaa ctctcggtgg      180
ccccctcagt agttttggaa gaggaccaag tccttgtctc tccagcagtg gacctggaag      240
caggatgccg gctcagggac ttcactgaga aaataatgaa tgtcaaagga aaagtaattc      300
tgtcaatgct ggttgtctca actgtgatca ttgtgttttg ggaatttatc aacagcacag      360
aaggctcttt cttgtggata tatcactcaa aaaacccaga agttgatgac agcagtgctc      420
agaagggctg gtggtttctg agctggttta acaatgggat ccacaattat caacaagggg      480
aagaagacat agacaaagaa aaaggaagag aggagaccaa aggaaggaaa atgacacaac      540
agagcttcgg ctatgggact ggtttaatcc aaacttgaag gaatccgaat aactaaactg      600
gactctggtt ttctgactca gtccttctag aagacctgga ctgagagatc atgcggttaa      660
ggagtgtgta acaggcggac cacctgttgg gactgcgaga ttctcaaggg gaaggactgg      720
gtctcatttc tcccatctca gcgcttagca ggatgacctg gtatagagca gggaactggg      780
aaatgtgggt cagggatca gacactccag ttgggtcttt tatataaatt aaatggcaaa      840
aggctccata cccttctcct tctttcctac cctccacttt atctgcaaaa tgggaatgat      900
gataacaccc acttcataga atggtcatga agatcaaatg agagaataaa agtcaagcac      960
ttagcctctg gtgcacaata agtattaaat aagtatacct attcctcctt ttccttttt     1020
taaaataata ttaccaaatg tccagcttat acacatttac aagacttagc tagtgggcta     1080
tgttagagct actaaaagat ctttgacaag ctaaaactaa gatgcaatga atgaggtgta     1140
acgaacaaga gagtttttaag ttcagaaatg gttacagaag tataagacag ctgtgtgggt     1200
gttttttggt ttttggtttc tggtttacaa tctcgtcatt caacaaagat gggagtttta     1260
tagaactaaa agcaccatgt aagctactaa aaacaacaac aaaaaaggct catcatttct     1320
cagtctgaat tgacaaaaat gccaatgcaa ataaaaatga ttacttttta ttttaaaaaa     1380
aaaaaagnaa aaaaaa                                                     1396



<210> 637
<211> 1475
<212> DNA
<213> Homo sapiens



<400> 637
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aagacagaga aggagccagt ggtcatggaa tgggctgggg tcaaagactg ggtgcctggg      120
agctgaggca gccaccgttt cagcctggcc agccctctgg accccgaggt tggaccctac      180
tgtgacacac ctaccatgcg gacactcttc aacctcctct ggcttgccct ggcctgcagc      240
cctgttcaca ctaccctgtc aaagtcagat gccaaaaaag ccgcctcaaa gacgctgctg      300
gagaagagtc agtttttcaga taagccggtg caagaccggg gtttggtggt gacggacctc      360
aaagctgaga gtgtggttct tgagcatcgc agctactgct cggcaaaggc ccgggacaga      420
cactttgctg gggatgtact gggctatgtc actccatgga acagccatgg ctacgatgtc      480
accaaggtct ttgggagcaa gttcacacag atctcacccg tctggctgca gctgaagaga      540
cgtggccgtg agatgtttga ggtcacgggc ctccacgacg tggaccaagg gtggatgcga      600
```

```
gctgtcagga agcatgccaa gggcctgcac atagtgcctc ggctcctgtt tgaggactgg    660
acttacgatg atttccggaa cgtcttagac agtgaggatg agatagagga gctgagcaag    720
accgtggtcc aggtggcaaa gaaccagcat ttcgatggct tcgtggtgga ggtctggaac    780
cagctgctaa gccagaagcg cgtgggcctc atccacatgc tcacccactt ggccgaggct    840
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gaccagctgg gcatgttcac gcacaaggag tttgagcagc tggcccccgt gctggatggt    960
ttcagcctca tgacctacga ctactctaca gcgcatcagc ctggccctaa tgcacccctg   1020
tcctgggttc gagcctgcgt ccaggtcctg gacccgaagt ccaagtggcg aagcaaaatc   1080
ctcctggggc tcaacttcta tggtatggac tacgcgaccc ccaaggatgc ccgtgagcct   1140
gttgtcgggg ccaggtacat ccagacactg aaggaccaca ggccccggat ggtgtgggac   1200
agccaggtct cagagcactt cttcgagtac aagaagagcc gcagtgggag gcacgtcgtc   1260
ttctacccaa ccctgaagtc cctgcaggtg cggctggagc tggcccggga gctgggcgtt   1320
ggggtctcta tctgggagct gggccagggc ctggactact ctacgacct gctctaggtg   1380
ggcattgcgg cctccgcggt ggacgtgttc ttttctaagc catggagtga gtgagcaggt   1440
gtgaaataca ggcctccact ccgaaaaaaa aaaaa                              1475
```

```
        <210> 638
        <211> 1131
        <212> DNA
        <213> Homo sapiens




        <400> 638
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tttgatgtag atgaagataa agtggtttct tggtcaataa ttgcaattgc tttcttttaa    120
agtcagtggg tttcttgtat agttctatta caattggccc aagtttaatt tcatccatct    180
ccatgaaagc aaaacacttg gtgctggtaa acctttttt aggcttgtag tgtttgaatt    240
caaagaagat agctgcacct ttggttaatt tttcaacatg cttctggagc tcaatgtcca    300
cattaaaatg aacatatgta tcttcttttc ttgaagccac aggagtatct tgcacaggag    360
ttaagtctat gccattcaga tcctttacac taactgtaat atagggattg atgcactgcc    420
cagcatcttt caaaccaatt ttctcaattc tgatagtgag taatgtcatt cctggttccg    480
atggcaacct tggtaataaa gtaccgggaa ctctagcagg aaaagaatca ggagaccctg    540
ctccagcacc accctcttct tcatcttctt caaattccaa attctcttct tcaccaggtg    600
ccaaaattct tcttaatggg acaggctgaa catcaaatgg gaattcttta ttatatgtaa    660
gaatattctt taggattggt tctagcttct tcaggtcctc cagtttaaat tcttcttgag    720
actgtgtgga ctgtaaagct gcacttcgca attccaagca tgttgcaatt ttgcctatgg    780
ttttctttg ttcttctgtg aattcagaat tattgtgttg agcttgggcc tcctttgta    840
gatgtcttgc taatatctga tactcgtcta tcgcctccac cagctggccc caagagtcga    900
agtcggcgcc tctcctaaaa ctggcgcccc agcgctgcag cagactccgg gtcacctccg    960
acatggccgg tccccacccc gtcccctccc gccctaccc cagcaaggcc gggttctagg   1020
gcgccatcct cccccggcct ggccccgaca ttaacagggc caggaggaac cgctacggcc   1080
accaccgcca cccgccgagg agccgcccaa gcccatttgc cgcccatgta t          1131
```

```
        <210> 639
        <211> 1844
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(1844)
        <223> n = a,t,c or g
```

<400> 639
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gaccaacatg gcgaaaccct gtcgccacta aaaacacaaa attaggcctg gtggcgcatg     120
cctgtaatcc cagccactcg gtaggccgag gcaggagaat cgcttgaacc caggaggagg     180
gaggttgcgg taaactgaga tcgcgccatt gcattccagc ccgggcacca agagcaaaac     240
tcggtctcaa ataaataagg ctctaacaat tgttctcata ttttaacatc cacaatgtga     300
ttcaagatgt aatcaacata aagcttgatt gcattatttt gcatgctaag ttttccaaat     360
ccagcttcgt gtcacaccta cagcacatct cactcaagct ggccacatcc ctgccatcca     420
gacgtaaaac agtcacaaga cagggctggc agggccgcgg aggaggccgg caggggccat     480
cacggagtgc ccatcctgca ctgtggtccc agcaagtttc ttcctcctgg caagaagcct     540
gtcccaggct ggcaggggac agcgtgaggt gcagcctatg gactgggaaa ggggtgtgga     600
agggccacac ctaagtccta aaatccaggc ccaaaagtgg cccaactcac ttctctgact     660
ttaatcacac aggcataccc ggtggcaaag gagtatggga aatggagtca ggctgggtag     720
ccacgagccc aggaagaagg gagaacagac ttggagaggg caggagtctc tggccaccag     780
gggctaaaga gccttcgatg aggcagtgat gtggggtcct gggctcagac ccagggtggg     840
tggctaaggt gcccttgcca ggacttagcc accccaacag agatgggttt cgtgcccacg     900
agagtgcctg tgccttgtga cgagaattca ccatgttttt gtctctgcag gcagagaaca     960
gcattgactt catcagcagg gagctgtgtg cgcattccat caggaagctg caggcccatg    1020
tcctgttgat caagtgagtc tggacccatc cccttcagtc accccccaag gagacatggg    1080
cgccaggaat ctccgggagg gggccctggc atgaggctcc aagttctctg cgtgtcgacc    1140
acatcgctaa gactcaagat ctttttgggg aagccccct ggcagcaggg tcatggaagg    1200
aggaaggtca gaggagggga gggctcaggc agcagggat gggccggggc tgtcccatgc    1260
ctttccacag gtgtcagcgg ggggcatgcc caggtaaggc tccataacca gtgagcccag    1320
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gagtagctgg gactacaggc gcccgccacc aggcctggct tattttgta ttttagtag    1440
agacgaggtt tcgccatgtt ggccaggctg ctctccatct cctgacctca tgatccgcct    1500
gcctcggcct cccagtgttg ggattacagg cgtgagccac cgtgcgtggc ccaccataga    1560
caattttaa gccataaaaa gaaacgaagc actgacacgg gctccagcat ggatgagcct    1620
ttaaaacatc gcgctaagtg gacgaattca gacacaaccg tctacgtgtt gtatggctgc    1680
attcacgttc aagtcaagtc caaatagggc acactgcaga gacaaagcca ggtcatggtt    1740
gctcaggacc ggaagcctgt tggggtggg ggggtggggt gtgtgtgtgt gtgtgtaagc    1800
tcagaggttt gcgatttctt tgggggtgat gaaaatgtaa ttgt               1844
```

<210> 640
<211> 1210
<212> DNA
<213> Homo sapiens

<400> 640
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ggaagtagga ggagagtcag gactcccagg acagagagtg cacaaactac ccagcacagc      60
cccctccgcc ccctctggag gctgaagagg gattccagcc cctgccaccc acagacacgg     120
gctgactggg gtgtctgccc cccttggggg ggggcagca cagggcctca ggcctgggtg     180
ccacctggca cctagaagat gcctgtgccc tggttcttgc tgtccttggc actgggccga     240
agcccagtgg tcctttctct ggagaggctt gtggggcctc aggacgctac ccactgctct     300
ccgggcctct cctgccgcct ctgggacagt gacatactct gcctgcctgg ggacatcgtg     360
cctgctccgg ccccgtgct ggcgcctacg cacctgcaga cagagctggt gctgaggtgc     420
cagaaggaga ccgactgtga cctctgtctg cgtgtggctg tccacttggc cgtgcatggg     480
cactgggaag agcctgaaga tgaggaaaag tttggaggag cagctgactc aggggtggag     540
gagcctagga atgcctctct ccaggcccaa gtcgtgctct ccttccaggc ctaccctact     600
gcccgctgcg tcctgctgga ggtgcaagtg cctgctgccc ttgtgcagtt tggtcagtct     660
gtgggctctg tggtatatga ctgcttcgag gctgccctag ggagtgaggt acgaatctgg     720
tcctatactc agcccaggta cgagaaggaa ctcaaccaca cacagcagct gcctgactgc     780
```

```
agggggctcg aagtctggaa cagcatcccg agctgctggg ccctgccctg gctcaacgtg     840
tcagcagatg gtgacaacgt gcatctggtt ctgaatgtct ctgaggagca gcacttcggc     900
ctctccctgt actggaatca ggtccagggc cccccaaaac cccggtggca caaaaacctg     960
gtgaggcctc ccccttccca agtccattcc cactgtaggc cgatgcctgt gcaaaggacg    1020
cagtgccata tcagagagga tccttgaaga ggactcaccc caagcaaggg aaaattggtg    1080
ggggaacttc tgccttcctg gtttccttga ctttggcctc ctcctcttcc tccttatctt    1140
ctccaacctc cttcctttat ttgttccaca gactggaccg cagatcatta ccttgaacca    1200
cacagacctg                                                           1210
```

```
        <210> 641
        <211> 1108
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 641
catatgaaca tttcaataaa ggtagaaaaa gcacttgata ttgaatgctt tcctcttgat      60
tttacaacca agacaaggaa gtccattatc actatttcta ttcaatagtg gacatactag     120
ccagcaacaa aactaaaagg tataaagatt acaggaaagt taaaccatct ctattcacag     180
actgcaagat tgtaatcaca taaattccaa aagactctac agactctaca gtcccacggc     240
agccccttcc tccgcgccgc ggcggcgcct ccggcccacg tcacgctcgc gccattgttt     300
cccagccgct gctcgctggg accccgccag ccctcgagcg cggccattcg ccgcgttctg     360
ccctctcccc ccttttcctca cgctggtggt ggccctttcc tcagtcctgc tgatgtcctc     420
cagctgattc caggctgttc ccggccaccc ctgaggccgt cctttcgctt cttgtaaaag     480
cctccccgcc tcctgagctc cctcggtcgc ctcccgagaa gccaacgggc ctctctggtg     540
gagcgctagg ttgacagcgt tttagcagga ccgcgagaaa ccggggagat cctcttacga     600
ggaaaaactc caagattaca tccctgttat ctttcctcca agtagtttct gatcataagt     660
tatttgttta aaaatgatgt tttaattaga atttatttga tggcttttaa aaaactttta     720
ctgacactca acatgtttgt ttttgtagga actgactaag actttggaac agaaaccaga     780
tgatgcacaa tattatcgtc aaagagctta ttgtcacatt cttcttggga attactgtgg     840
tgcagatgct aatttcagtg actggattaa aaggtgtcga agctcagaat ggctcggaat     900
ctgaggtgtt tgtggggaag tatgagaccc tcgtgtttta ctggccctcg ctgctgtgcc     960
ttgccttcct gctgggccgc ttcctgcata tgtttgtcaa ggctctgagg gtgcacctcg    1020
gctgggagct ccaggtggaa gaaaaatctg tcctggaagt gcaccaggga gagcacgtca    1080
agcagctcct gaggataccc cgccctca                                       1108
```

```
        <210> 642
        <211> 2418
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 642
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ggtctgaggg cgcaagacgt tcaaagaaca ctttagaaag aacacattcc atgaaagata     120
aagctggtca aaagtgcaag cctattgacg tgttcgactt tcctgataat tctgatgtct     180
caagcattgg caggctgggt gaaaatgaga agatgaaga aacttatgag acctttgatc      240
ctcctttaca tagcacagct atatatgctg atgaagaaga attctccaaa cattgtggac     300
tgtctctctc ttcaactcct ccaggaaaag aagcaaaaag aagttcagac acttctggaa     360
atgaagcaag tgaaatcgaa tctgtaaaaa ttagtgcaaa aaagccagga agaaagctca     420
```

```
ggcccattag tgatgactct gaaagcattg aagaaagtga tacaaggaga aaagttaaat    480
cagcagagaa aataagtaca caacgtcatg aggttattcg aaccacagcg tcttcagaac    540
tttcagagaa accagctgag tctgtcactt ctaaaaagac aggaccccct agtgcccagc    600
cctctgttga aaaagagaac ttggcaatag aaagtcaatc gaaaactcag aaaaaaaggg    660
aagatatctc atgacaaaag gaagaaatca agaagtaaag ccataggctc agatacttct    720
gacattgtgc acatttggtg tccagaagga atgaaaacca gtgacatcaa ggagttgaat    780
attgttttgc ctgaatttga gaaaacccac ctagagcatc aacaaagaat agaatctaaa    840
gtttgtaagg cagccatcgc cacattttat gttaatgtta agaacaatt catcaaaatg    900
cttaaagaaa gccagatgtt gacaaatctg aaaaggaaga atgctaagat gatttcagat    960
atcgaaaaga aaggcagcg tatgattgaa gtccaggatg aactgcttcg gttagagcca   1020
cagctgaaac aactacaaac aaaatatgat gaacttaaag agagaaagtc ttcccttagg   1080
aatgcagcat atttcttatc taatttaaaa cagctttatc aagattattc agatgttcaa   1140
gctcaagaac caaacgtaaa ggaaacgtat gattcatcca gccttccagc tctgttattt   1200
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tctcatgctg ttaccttctg aaactgtacc tttataaatc aattgttttg caaagaagtt   1380
atggcctact tagaatctaa aatttgttat tcaaattaaa tggctgtgaa caatgttaaa   1440
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caccaaagct aatttttaat gaaattgggt ttacaggaag gtaaaaaaca aaaattggga   1680
aaggcaaagt aataaaactt agtttatata aacaggttga atgatatatt tatcaaatct   1740
cacagacatc aggcaaatta tagcctggtg acaaaagtgt tcatagtgaa ttagttactc   1800
ttgtaatact tctataatta gttcatcagg aatttcatcc acttcactgt tataactgag   1860
aagactgttc tctgcagctt cagctaattc agcatcttca gtagcttcta aaaaataagc   1920
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tgatggttta tgaggattct gggtttcatt gctcctagtt tcatctgctt catctgttgt   2040
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gtcagatttg aagttttttg ctttacatac agggtcatga catttttat accaaacttc   2160
attttttcaga tcaaccagaa tccttttttgt ttaaaaaaaa aaaaaagtat taataccaag   2220
actgggtaga aaacaaaatc cagctgcatg ctgttccaag aaatatgcct aagacttaaa   2280
gatggagaaa aattaaaaag taaaaggata aggatagata cataccaatc aaaacggtgg   2340
ttgccaaaaa tcacacaaaa tgaactgcag ggcaaaaagt agatactgat gaaagttccc   2400
ccaggaagat gtaacaat                                                  2418
```

```
<210> 643
<211> 1166
<212> DNA
<213> Homo sapiens
```

```
<400> 643
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cttattatta agcatccatt taggggaaag gtttcaatgc gccgtcccgt gttaagatag    120
ggcccccaa ggaacctta aaaaggcccc cccctttttt tttttttgaa agtataaaaa    180
tcattttact ttaatacaaa atcacataaa gaaaggcatg ttggctaaat caaatattca    240
ctaaatatca gtgaagtcac cactggaatc tcaatagcac attttcctgc tttcttttct    300
cccttctgct aaccattgaa gaccagggtc atccgtggga gcagatgagt aggacacgcg    360
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cacatccctt ctgttttttct tgatttcagt ctcactggcc caggccaaat cttcaagggt    480
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tcctcctggg ccttctcttg gtggaatcag gccactcccc gctggccgga gggctctgtc    840
tccgcagccc ctccacctcc ttcctgaggt ggtccctctc catcttcagc tcctccagcg    900
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```
ccaggctgcc ctcattcacc agcgcctcca gcatctccag gacgcggacg actttgaact     960
gcagctgcgt cacccggggg tcgctgccca gggccataag ctcgcggccc aacaggtagg    1020
agatgtcata cacgtcctcg gcggtcagct ggaaggggct cttgcccagc gcccccctcgg   1080
gcccaacctc gtccctctcc tcgtcctcct ctccctcctc ctattcctct tctcgcacag    1140
ggggctcctc catggccacc cagacc                                         1166
```

```
<210> 644
<211> 1024
<212> DNA
<213> Homo sapiens
```

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<400> 644
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atgaagagag aaggggggtgc cgcccacctc tgctccgaca gcctcccgga gtcccagcag    180
caagacggca accacgcacc caacttctcc agccacggct catgccgccg tcgccagcgg     240
cgccgacatg acaaggcgct gcatgcccgc taggccaggt ttcccctcat ccccagcccc     300
ggggtcgtcg cccccgcgct gccatctgag acccggtagt accgcccatg ctgcagcggg     360
aaagagaaca gagagtcctg gggacaggta ccgtgcagag ggcttgagaa ggggccgggt     420
cgcggggggca agggtatgag gggagggctg cagaccgccg ctcttccagt tcccgccatc     480
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aggggctact gggagttgga gtttgcttct ctgtagttgg gcagctgctc ttggtctagt     600
gaccaccagc ctggacagct acggagaacc cgccttaggt agaaagaaag tgattttttt     660
cctttgcaag agtttgaccc gggaccctaa ctgcttaatg catatttaga tcgtttttctg    720
tacgttgtca gttctactga tcctagtggt ttagtaatat aaaccttttc tatgttgtgg     780
gtgaaattat gtaacctgtg atgagggaat cccttccacg aattactttg tagtccagcg     840
tgcacgctag ttcatactta aaagaacttg cagatttgga atgtgacgtg ttttctcttt     900
cagtaacttc gacgcctctc caagaggcta atttttttt aaagattttg tgggagctat      960
gtaatgagat ggggagtttc atctaatgac atcctctgac aataaaacat gtttaaattc    1020
ccta                                                                 1024
```

```
<210> 645
<211> 499
<212> DNA
<213> Homo sapiens
```

```
<400> 645
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gcctcagcct ggggggtcac cctgagcccc aaagactgcc aggtgttccg ctcagaccat     180
ggcagctcca tctcctgtca accacctgcc gaaatccccg gctacctgcc agccgacacc     240
gtgcacctgg ccgtggaatt cttcaacctg acccacctgc cagccaacct cctccagggc     300
gcctctaagc tccaagaatt gcacctctcc agcaatgggc tggaaagcct ctcgcccgaa     360
ttcctgcggc cagtgccgca gctgagggtg ctggatctaa cccgaaacgc cctgaccggg     420
ctgccccgg gcctcttcca ggcctcagcc accctggaca ccctggtatt gaaagaaaac     480
cagctggagg tcctggagg                                                   499
```

<210> 646
<211> 709
<212> DNA
<213> Homo sapiens

<400> 646
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ctgacttaca gctcttataa actagtggca atttctgaac ccagccggct ccatctcagc    60
ttctggtttc taagtccatg tgccaaaggc tgccaggaag gagacgcctt cctgagtcct   120
ggatctttct tccttctgga aatctttgac tgtgggtagt tatttatttc tgaataagag   180
cgtccacgca tcatggacct cgcgggactg ctgaagtctc agttcctgtg ccacctggtc   240
ttctgctacg tctttattgc ctcagggcta atcatcaaca ccattcagct cttcactctc   300
ctcctctggc ccattaacaa gcagctcttc cggaagatca actgcagact gtcctattgc   360
atctcaagcc agctggtgat gctgctggag tggtggtcgg gcacggaatg caccatcttc   420
acggacccgc gcgcctacct caagtatggg aaggaaatg ccatcgtggt tctcaaccac    480
aagtttggaa atttgacttt ctgtgtggct ggagcctgtc cgaacgcttt gggctgttag   540
gggtaagtca aaagtgcatt ccccccctgcc tcacacattt ttttggttca gcccccccac   600
ttgtcttttt gctcctggtc attcagaact tgcagaagaa tcaacagagt ttttacttga   660
tgaaatggtc ctaataaact gctttttat tcttgctagg aaaaaaaaa               709
```

<210> 647
<211> 1498
<212> DNA
<213> Homo sapiens

<400> 647
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ccgttctctc ggacctgtca caaaggagtc gcgccgccgc cgccgccccc tccctccggt   120
gggcccggga ggtagagaaa gtcagtgcca cagcccgacc gcgctgctct gagccctggg   180
cacgcggaac gggagggagt ctgagggttg gggacgtctg tgagggaggg gaacagccgc   240
tcgagcctgg ggcggcggga ccggactggg gccggggtag gctctggaaa gggcccggga   300
gagaggtggc gttggtcaga acctgagaaa cagccgagag gttttccacc gaggcccgcg   360
cttgagggat ctgaagaggt tcctagaaga gggtgttccc tctttcgggg gtcctcacca   420
gaagaggttc ttggggggtcg cccttctgag gaggctgcgg ctaacagggc ccagaactgc   480
cattggatgt ccagaatccc ctgtagttga taatgttggg aataagctct gcaactttct   540
ttggcattca gttgttaaaa acaaatagga tgcaaattcc tcaactccag gttatgaaaa   600
cagtacttgg aaaactgaaa actacctaaa tgatcgtctt tggttgggcc gtgttcttag   660
cgagcagaag ccttggccag ggtctgttgt tgactctcga agagcacata gcccacttcc   720
tagggactgg aggtgccgct actaccatgg gtaattcctg tatctgccga gatgacagtg   780
gaacagatga cagtgttgac acccaacagc aacaggccga gaacagtgca gtacccactg   840
ctgacacaag gagccaacca cgggacccctg ttcggccacc aaggaggggc cgaggacctc   900
atgagccaag gagaaagaaa caaaatgtgg atgggctagt gttggacaca ctggcagtaa   960
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tggcagaaac agatgaagga tggttggatg ttgtccagtc tttaattaga gttattccac  1080
tggaagatcc actgggacca gctgttataa cattgttact agatgaatgt ccattgccca  1140
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tacagtgtct gttacagtcc caccccacag tcatgctttt tgcacttatc gcactggaaa  1380
agtttgcaca gacaagtgaa aataaattga ctatttctga atccagtatt agtgaccggc  1440
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ttggtcacat tggagtcctg gggctaatga tcctgattat ctgaaacgtc aagttggt        1498
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        <210> 648
        <211> 1013
        <212> DNA
        <213> Homo sapiens
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        <400> 648
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ctgacccgcg ctctgcgctc tctgaacctg gcgcccccga ccgtcgccgc ccctgccccg        120
agtctgttcc ccgccgccca gatgatgaac aatggcctcc tccaacagcc ctctgccttg        180
atgttgctcc cctgccgccc agttcttact tctgtggccc ttaatgccaa ctttgtgtcc        240
tggaagagtc gtaccaagta caccattaca ccagtgaaga tgaggaagtc tgggggccga        300
gaccacacag gccgaatccg ggtgcatggt attggcgggg gccacaagca acgttatcga        360
atgattgact ttctgcgttt ccggcctgag gagaccaagt caggaccctt tgaggagaag        420
gttatccaag tccgctatga tccctgtagg tcagcagaca tagctctggt tgctggggggc        480
agccggaaac gctggatcat cgccacagaa aacatgcagg ctggagatac aatcttgaac        540
tctaaccaca taggccgaat ggcagttgct gctcgggaag gggatgcgca tcctcttggg        600
gctctgcctg tggggaccct catcaacaac gtggaaagtg agccaggccg gggtgcccaa        660
tatatccgag ctgcagggac gtgtggtgtg ctactgcgga aggtgaatgg cacagccatt        720
atccagctgc cctctaagag gcagatgcag gtgctggaaa cgtgcgtagc aacagtaggc        780
cgagtatcca acgttgatca taacaaacgg gtcattggca aggcaggtcg caaccgctgg        840
ctgggcaaga ggcctaacag tgggcggtgg caccgcaagg ggggctgggc tggccgaaag        900
attcggccac tacccccat gaagagttac gtgaagctgc cttctgcttc tgcccaaagc         960
tgatatccct gtactctaat aaaatgcccc ccccccccgt tttaaaaaaa aaa               1013
```

```
        <210> 649
        <211> 1504
        <212> DNA
        <213> Homo sapiens
```

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        <400> 649
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aaattttaaa atttctgaaa tcatgcagtt aacatctgca cacttcacta tattttaagt        180
ttttgttaat ataaaagaat aagaaaacag aaaagtatta ctgttaaaca ataatagaga        240
aatgtatact ttatttataa atttctccct ctagctgatc atacagttga ccagttcagg        300
gtgcccgctg ctggttggat gccaggcgga atgtcagggt gttctctggt gtctgttgtg        360
gctgtgggat ccacggttac tgggcggagc cctgtggtgg ctgtggtgcc atggaggggc        420
tgcgatcttc tgtggagctg gaccctgagc tgactccagg gaagctggat gaggagatgg        480
tggggctgcc acccccatgac gcgagtcctc aagtcacttt ccacagcctc gatgggaaga        540
cagtggtgtg tccacacttc atgggcttac tgctgggtct cttacttta ttgactttgt        600
ctgttaggaa ccaactctgt gtaagaggtg aaaggcagct tgcagaaaca ctgcattcac        660
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aagaaggtga atagcaccaa cgagatgctg atggagaaat ttaccaccct cgttcaagaa        840
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```

```
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gatttatgta ttaatctcct aagtgaacaa tttatatttt atcctctaca taattatcgt   1440
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aaaa                                                                 1504
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<210> 650
<211> 2231
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(2231)
<223> n = a,t,c or g

<400> 650
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cagtcttggg cgaggtggcg tggatgagct ggtgaaagag gatgctgccc acatccaaag    180
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gagggtagga aagaagcccc tggggatgcc ttcccagaat tcatttgatg gggatccctg    420
gcataactgc ttgggaacac agaaagaggc tgtgacacag ctgagctttt ggagcatttt    480
aaggagctcc agctccagca aaacaaactc ttgcatttca gcccagaaag agcctcttgt    540
aacaaagtat tccaaagggg agagtttctg catcttttac tttgcagtcc actatggtag    600
aaaacttgac attccataga taatgatact gggtttttctt tccaagatgc cagctttaaa    660
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gccctcccaa tgcaggttaa gacgacagcc tgcgccccca actagcacag ctcagcgagc    780
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cctttcccc aataactaca ccaaagccat cgacatgtgg gcgcgcggct gcatcctggc   1620
tgagatgctt acggggagaa tgctctttgc tggggcccat gagctggagc agatgcaact   1680
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cgagcccacc tcacaacacc ccttccgcat tgaggatgag atcgacgaca tcgtgctgat   1980
ggccgctaac cagagccagc tgtccaactg ggacacgtgc agttccaggt accctgtgag   2040
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```
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cgacccgcgc gcgggttcgg cgccactggc tgagaacgtg caggtggacc cgcgcaagga    2160
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tnntctcccc t                                                         2231
```

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      <211> 2458
      <212> DNA
      <213> Homo sapiens
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      <400> 651
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tctgaaggtg atgacttcaa ttgggagcaa gtgaacacct tgactaaacc gacttctgat    180
ccatggatgc catcaggttc tttcatgctg gtgaatgcct ctgggagacc tgaggggcag    240
agagcccacc tgctcttacc ccaacttaaa gaaaatgaca cccactgcat cgattttcac    300
tattttgtgt ccagcaagag taattctcct ccggggttac tcaatgtcta cgtgaaggtc    360
aataacgggc cactggggaa tcctatctgg aatatatctg gagacccaac acgtacatgg    420
aacagggcag aactggccat tagtactttc tggcctaact tttatcaggt gatttttgaa    480
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atgattccgc actgaaggag gtgttggaat atcaaactat gcagagttgg gtagttaaag    840
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cctttaccat ccgagctagc acagctaagg gttttgggcc tccagcaaca aaccagttca   1740
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ataataagac atataatgga tactggaaca ctcccccttct cccctataaa agctacagaa   2100
tttatttcca agctgctagt agagccaatg gggaaaccaa aatagactgt gtccaagtgg   2160
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gtgaggcctc aggaagcttc caatcatgga ggaaggcaaa gcacaagcag gcgtgtccca   2400
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```

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      <210> 652
      <211> 457
      <212> DNA
      <213> Homo sapiens

      <220>
      <221> misc_feature
      <222> (1)...(457)
      <223> n = a,t,c or g




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ttgatatggt cgtctgtaaa ggatttgtac aagatttaga tgaatcgttt aaagaaaatc     180
gaaatgatga catttggctt gtacattttt atgcgccatg gtgtggccat tgtaaaaagc     240
tggaaccaat ttggaatgaa gctggtcttg agatgaaaag cattggttct ccagttaagg     300
ctggaaagat ggatgctact tcctattcta gcattgcttc agagtttgga gttcgaggtt     360
atccaacaat taagctggct ctaattcggc cacttccaag tcaacaaatg tttgaacata     420
tgcacaagag acaccgcgta tttttcgttt atgtaag                             457




      <210> 653
      <211> 1014
      <212> DNA
      <213> Homo sapiens




      <400> 653
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acagtgttag caattatcac ccattcatca ggtattaatt catttcgatc ccaagggcat     120
aggcttgatg tacaataagg agttaaggac tgtgagttct ctgataaggt ttggttatag     180
tcatttctca cttctcaccc tctccaggac tacttccagc aacccagtct cctgccatgt     240
ccgaccccat cacgctgaac gtcggggggga agctctatac aacctcactg gcgaccctga     300
ccagcttccc tgactccatg ctaggcgcca tgttcagcgg gaagatgccc accaagaggg     360
acagccaggg caactgcttc attgaccgtg acggcaaagt gttccgctat atcctcaact     420
tcctgcggac ctcccacctt gacctgcctg aggacttcca ggagatgggg ctgctccgca     480
gggaggccga cttctaccag gtgcagcccc tgattgaggc cctgcaggag aaggaagtgg     540
agctctccaa ggccgagaag aatgccatgc tcaacatcac actgaaccag cgtgtgcaga     600
cggtccactt cactgtgcgc gaggcacccc agatctacag cctctcctct tccagcatgg     660
aggtcttcaa cgccaacatc ttcagcacct cctgcctctt cctcaagctc cttggctcta     720
agctcttcta ctgctccaat ggcaatctct cctccatcac cagccacttg caggacccca     780
accacctgac tctggactgg gtggccaatg tggagggcct gccagaggag gagtacacca     840
agcagaacct caagaggctc tgggtggtgc ccgccaacaa gcagatcaac agcttccagg     900
tcttcgtgga agaggtactg aaaatcgctc tgagcgatgg cttctgcatc gattcttctc     960
acccacatgc tctggatttt atgaacaata agattattcg attaatacgg taca          1014




      <210> 654
      <211> 1725
      <212> DNA
```

<213> Homo sapiens

```
<400> 654
attcgtgcgc cgataatttg gtggcggcgt ccggagggtg ctggtttgtt ctcggtgaac       60
ggcgcgcggg gtctctcctg agtgcgagct acgggacctt cgccatgccg gggatggtac      120
tcttcggccg gcgctgggcc atcgccagcg acgacttggt cttcccaggg ttcttcgagc      180
tggtcgtgcg agtgctgtgg tggattggca ttctgacgtt gtatctcatg cacagaggaa      240
agctggactg tgctggtgga gccttgctca gcagttactt gatcgtcctc atgattctcc      300
tggcagttgt catatgtact gtgtcagcca tcatgtgtgt cagcatgaga ggaacgattt      360
gtaaccctgg accgcggaag tctatgtcta agctgcttta catccgcctg gcgctgtttt      420
ttccagagat ggtctgggcc tctctggggg ctgcctgggt ggcagatggt gttcagtgcg      480
acaggacagt tgtaaacggc atcatcgcaa ccgtcgtggt cagttggatc atcatcgctg      540
ccacagtggt ttccattatc attgtctttg accctcttgg ggggaaaatg gctccatatt      600
cctctgccgg ccccagccac ctggatagtc atgattcaag ccagttactt aatggcctca      660
agacagcagc tacaagcgtg tgggaaacca gaatcaagct cttgtgctgt tgcattggga      720
aagacgacca tactcgggtt gctttttcga gtacggcaga gctttctca acctactttt      780
cagacacaga tctggtgccc agcgacattg cggcgggcct cgccctgctt catcagcaac      840
aggacaatat caggaacaac caagagcctg cccaggtggt ctgccatgcc ccaggagct      900
cccaggaagc tgatctggat gcagaattaa aaaactgcca tcattacatg cagtttgcag      960
cagcggccta tgggtggccc ctctacatct acagaaaccc cctcacgggg ctgtgcagga     1020
ttggtggtga ctgctgcaga agcaagaacc cacagactat gacttggtcg gaggcgatca     1080
gcttcaactg tcacttcggc tcccatcctg cacacccaca gggctgcagt acagggactt     1140
catccacgtc agcttccatg gacaaggttt acggagctgc cgtttttagt ggctctggat     1200
cacaggaaag agtctgttgt ggtcgctgtg aggggggacca tgtctctgca ggatgtcctt     1260
acggacctgt cagcggagag tgaggtgcta gacgtggagt gtgaggtgca ggaccgcctg     1320
gcacacaagg gtatttctca agctgccaga tacgtttacc aacgactcat caacgacggg     1380
attttgagcc aagccttcag cattgctcct gagtaccggc tggtcatagt gggccacagc     1440
ctcgggggag gggcggccgc cctgctggcc accatggtca gagccgccta cccgcaggtc     1500
aggtgctacg ccttctcccc accccggggg ctgtggagca aagctctgca ggaatattct     1560
cagagcttca tcgtgtcact cgtcctgggg aaggatgtga ttcccaggct cagtgtgacc     1620
aacttggaag atcttgaaga gaagaatctt gcgagtggtc gcgcactgca ataaacccaa     1680
gtacaagatc ttgctgcacg gtttgtggta cgaactgttt ggagg               1725
```

<210> 655
<211> 748
<212> DNA
<213> Homo sapiens

```
<400> 655
tttcgtgcgg cgactgcagc agcgaagggg aatggggggcg gcggtggcag ggccggggcc       60
ggggacgcca gcggcacgcg gaagaagaag ggcccggggc ccctggccac ggcgtacctg      120
gtcatctaca atgtggtgat gacagccggg tggctggtta tagcggttgg tctggtccga      180
gcataccctgg ctaagggtag ctaccatagc ctttattatt caattgaaaa gcctttgaaa      240
ttctttcaaa ctggagcctt attggagatt ttacattgtg ctataggaat tgttccatct      300
tctgttgtcc tgacttcttt ccaggtgatg tcaagagttt ttctaatatg ggcagtaaca      360
catagcgtca aagaggtaca gagtgaagac agtgtccttg tttgttattg catggacgat      420
cacggaaatc atccgttact cctttttatac attcagtcta ttaaaccatc tgccttacct      480
catcaaaagg gccaggtaca cacttttcat tgtgctgtac ccaatgggag tgtcaggaga      540
actgctcaca atatatgcag ctctgccctt tgtcagacaa gctggcctat attccatcag      600
tttacccaac tctacaaaaa aaattttttt aattagccag gtatggtggc atatgcttgc      660
agtctcagct gacgctaagg cggcagaaat gcctgctgta cttaagcctg gccatagag      720
aaggaccttg tctctaaata aataaata                                          748
```

<210> 656
<211> 977
<212> DNA
<213> Homo sapiens

<400> 656
cggccgcgtc gacagacaga cgggagcagt gcttttccta gagtagagta tgctctataa   60
atgtctactg aatgttgact ggtgttggat gtcttgtctc ctcagaatct ctgagctgcg   120
tgcagtgtaa ttcatgggaa aaatcctgtg tcaacagcat tgcctctgaa tgtccctcac   180
atgccaacac cagctgtatc agctcctcag ccagctcctc tctagagaca ccagtcagat   240
tataccagaa tatgttctgc tcagcggaga actgcagtga ggagacacac attacagcct   300
tcactgtcca cgtgtctgct gaagaacact ttcattttgt aagccagtgc tgcgaaggaa   360
aggaatgcag caacaccagc gatgccctgg accctcccct gaagaacgtg tccagcaacg   420
cagagtgccc tgcttgttat gaatctaatg gaacttcctg tcgtgggaag ccctggaaat   480
gctatgaaga agaacagtgt gtctttctag ttgcagaact taagaatgac attgagtcta   540
agagtctcgt gctgaaaggc tgttccaacg tcagtaacgc cacctgtcag ttcctgtctg   600
gtgaaaacaa gactcttgga ggagtcatct ttcgaaagtt tgagtgtgca aatgtaaaca   660
gcttaacccc cacgtctgca ccaaccactt cccacaacg gggctccaaa gcttccctct   720
acctcttggc ccttgccagc ctccttcttc ggggactgct gccctgaggt cctggggctg   780
cactttgccc agcaccccat ttctgcttct ctgaggtcca gtagcactcc ctgcggtgct   840
gacaccctct ttccctgctc tgccccgttt aactgcccag taagtgggag tcacaggtct   900
ccaggcaatg ccgacagctg ccttgttctt cattattaaa gcactggttc attcactgcc   960
caaaaaaaaa aaacatt   977

<210> 657
<211> 746
<212> DNA
<213> Homo sapiens

<400> 657
tttcgtggcg gaacggagga ggaggcggtg gtgtcccggc tgcggggtag gagtccgcgg   60
cagcctccgg gtaagccaag cgccgcgcag tgctgagttc ccgcacgccg cagagccatg   120
gagatcggca ccgagatcag ccgcaagatc cggagtgcca ttaaggggaa attacaagaa   180
ttaggagctt atgttgatga agaacttcct gattacatta tggtgatggt ggccaacaag   240
aaaagtcagg accaaatgac agaggatctg tccctgtttc tagggaacaa cacaattcga   300
ttcaccgtat ggcttcatgg tgtattagat aaacttcgct ctgttacaac tgaaccctct   360
agtctgaagt cttctgatac caacatcttt gatagtaacg tgccttcaaa caagagcaat   420
ttcagtcggg gagatgagag gaggcatgaa gctgcagtgc caccacttgg ccattcctag   480
cgcgagacct gaaaaaagag attccagagt ttctacaagt tcgcaggagt caaaaaccac   540
aaatgtcaga cagacttacg atgatggagc tgcaacccga ctaatgtcaa cagtgaacct   600
ttgagggagc cagcacccct ctgaagatgtg attgatatta agccagaacc agatgatctc   660
attgacgaag acctcaactt tgtgcaggag aaacccttat ctcagaaaaa acctacagtg   720
acacttacat atggttcttc tcgccc   746

```
        <210> 658
        <211> 559
        <212> DNA
        <213> Homo sapiens




        <400> 658
cctccctgct gtgggctggc ctgggaggaa gggggtgggg tgcacttaca tttgcaggtc        60
tttccagccc ctggggcagc ctgattaacc agcttctcca gggccaagct gttgggggtg       120
aggtgcagcc cgaagcagcc agaccagccc ctgagcctcc cgggtgctgg cagctgtcat       180
ggggctaccc tggggcagc ctcacctagg gctgcagatg ctcctcctgg cgttgaactg       240
tctccggccc agcctgagcc tggagctggt gccctacaca ccacagataa cagcttggga       300
cctggaaggg aaggtcacag ccaccacctt ctccctggag cagccgcgct gtgtcttcga       360
tgggcttgcc agcgccagcg ataccgtctg gctcgtggtg gccttcagca atgcctccag       420
gggcttccag aacccggaga cactggctga cattccggcc tccccacagc tgctgaccga       480
tggccactac atgacgctgc ccctgtctcc ggaccagctg ccctgtggcg accccatggc       540
gggcagcgga agcgccgcca                                                   559




        <210> 659
        <211> 538
        <212> DNA
        <213> Homo sapiens




        <400> 659
ctgggaagga cttggggggac tagaggcgag gggagagagc ttgtggaagg tgcggcagag      60
aagggcccag gagaaaggag gaaggggaagg agctggaggg gcgggagaac aggagacaga     120
acaggacaga gacagctgcc cggggaggatg ggagaacaga aagagggagg aaacgccgag     180
cactgacctg gggggagggga gtaaagagaa gtgaaggggg attggaaggg aactggagaa     240
tgagagaagc aacaggcggg gtgcgtgtag gagggcggga gagccaatga caagacagaa     300
aaggcagaga aagcaaagca agaccagact cctcatccgg taacactgtg tcaggtcatt     360
gccctcccac cccgccccca accccataac tgaaaacaag taggaacctg gataaaatag     420
tcttaacaat tttttttttg agacggagtc ttgctgtgtt gcccaggctg gagtgcagtg     480
gcgcgatctc ggctcactgc aggctccgcc tcccgggttt aagcggttct cctgccta      538




        <210> 660
        <211> 735
        <212> DNA
        <213> Homo sapiens




        <400> 660
acgatttcgt ccggcccogg cgccccagcc cctggccaag cctctgctgt cattttttct        60
ccctcctctc agtctgcagc tgcgggacgg gccgggctcc tcagtttctg ctgtgttgtg       120
accccacgag gcgctcagca cccagggaag gcgcgtgtgt ccccgatgct ggctcctccc       180
tgagccccga cggctctcga ggttctgagc ctgtggcctg cacagggaac ttcctctccg       240
```

```
actgcattta tgcctctgtg gatgtgaagg ctatttctag aaatctcttc ctttgcagaa      300
acacccgaaa ccctcctgcc aggaagacca gggcctggga agagggtcgc tctccggcca      360
ttctcccctc accctcctca ccttcctcac atcctgtgcc ctgggggacc agcagctgct      420
tccacccaga acaagcggga gcctgtgtca ggaaagcatg tcagagcaga gctgccagat      480
gtccgaactg cggctcctcc tcctgggaaa atgccgctcg ggaaaaagtg ccacaggaaa      540
tgccattctg ggcaaacatg tgttcaagtc caagttcagt gatcagacag tgatcaaaat      600
gtgccagaga gagagttggg tcctgagaga aaggaaggtt gtggtaattg acacccctga      660
cctttctcc tcaatagctt gtgctgaaga caagcaacgc aacatccaac acttgttgga      720
gctctctgct cccag                                                        735
```


```
        <210> 661
        <211> 978
        <212> DNA
        <213> Homo sapiens
```


```
        <400> 661
tttcgtggag acgactgtga gcgtgcaaag cgcagagtcc tctgatgccc tgagctggtc       60
caggctgccc agggccctgg cctccgtagg ccctgaggag gcccgaagtg gggcccccgt      120
gggcggggggg cgttggcagc tctccgacag agtggaggga gggtccccaa cgctgggctt      180
gcttggggggc agcccctcag cacagccggg gaccgggaat gtggaggcgg gaattccttc      240
tggcagaatg ctggagcctt tgccctgttg ggacgctgcg aaagatctga aagaacctca      300
gtgccctcct ggggacaggg tgggtgtgca gcctgggaac tccagggttt ggcagggcac      360
catggagaaa gccggtttgg cttggacgcg tggcacaggg gtgcaatcag aggggacttg      420
ggaaagccag cggcaggaca gtgatgccct cccaagtccg gagctgctac cccaagatca      480
ggacaagcct ttcctgagga aggcctgcag ccccagcaac atacctgctg tcatcattac      540
agacatgggc acccaggagg atggggcctt ggaggagacg cagggaagcc ctcggggcaa      600
cctgcccctg aggaaactgt cctcttcctc ggcctcctcc acgggcttct cctcatccta      660
cgaagactca gaggaggaca tctccagtga ccctgagcgc accctggacc ccaactcagc      720
cttcctgcat accctggacc agcagaaacc tagagtggtg gagtctcgct ctgtcaccca      780
ggctggagtg cagtggcatg atatcggctc actgcaacct ctgcctcccg gattcaagca      840
attctcccgc ctcagccttc cgaatagctg ggactacagg cgcatgccac catgcccgga      900
taatttttgg attttttagta gagagggggat ttcaccatgt tggccaggat ggcctctatc      960
tcttgatctt gtgatacg                                                     978
```


```
        <210> 662
        <211> 1118
        <212> DNA
        <213> Homo sapiens
```


```
        <400> 662
catgaactcc cggccttaag tgacccacct gcctcggcct cccaaagtgc tgggactata       60
ggtgtgggcc actgcgcccg gccagtgtat tttaaaatta taaagccgat atattacaaa      120
gtaaaatgca ggggaaaaaa agtcacaaga agtataaaga ttggatgctt cttgtgcttc      180
tttttgtaaa atacagatga tccctcaagaa gtaacttgag cagattttct actggctttc      240
aaattgataa ccctacaccc cctataaatt tttacattcc ttaacagagc taaccatagg      300
aacttccaaa taatttctca gtggaaatga gtcttcaaaa tcacacatgg ctcataagag      360
ttttgctttt ttaatgcctt ctcaaaggac ccagactgct agattttcat aataactact      420
ttaaccagat agacttacta tagggtggta gttccccact aaaagatact tttctcttgc      480
```

```
ttagtagtca ccttcctgtg ttctagagct tccctatgct tttaaaatat gcattattac    540
aacagttctc ctaaaaacaa aaccccccata agagctgctg cactcgggga gccctgaatg    600
aattttaaag cagcgcctga gtcctgcatt ctttcttcat tgtccttttt gcttaatttg    660
cctgtggtgt accatcaacc ttacaatgga gacagagaga aagtactccc cctaacctat    720
ttaagaaaca tttgcaatat actgtttttt tttttttacaa gtctttaatt aaaaaaactca   780
acaaaaatat ataattgagc attttacata atgcatacat tcttaatatc tgcaggtaag    840
ataaacaaca gaaggcaaaa gcagatatgc tgtattgctt ctttggcaac tcaccaatat    900
catcccctgc agaaacagag tttttttttt tttttttta aatccatggt cttaaaataa     960
ttgtccctta gtataaacaa aatatttagc aataatacag tagacggatt cttcaaattc    1020
acaacaattt ataatacttt ataccacaag ggtaaactag taagctgctt tctaaaatta    1080
aggcagcagc agtgtttaga gggggagtaa aaaaaaaa                            1118
```

<210> 663
<211> 556
<212> DNA
<213> Homo sapiens

<400> 663
```
gaaatgccta ttttcatttc tgatcttact tacttgtgtt ttttctcttt ttaattattc     60
ttactagaag tttatcaatt ttattactct ttccaaagaa caagcttttg gctttgctaa    120
ttttctctat tatttacttg ttttaaaaaa tgtattggtt tctgctctta tctttattat    180
gttttтcttc tacttagtat taatttagtt tgttcttttc ctagcctctt aaggtagaaa    240
cttagataat tgattttaag ccttcctttta ctatatgggc acttgaaaag ctatacattt   300
ccctctgaac actaccttca tttgctacaa acatttgcta cattcaacaa atatttgaat    360
gtgtgtgttt taattttcat tcatcacaaa cccgtggtcc cagctattca ggggactaat    420
gtgggaggat cacttgagcc caggaggttg aggctgcagc aagccatgat tgtgccacta    480
cattttggcc tgggcaacag agtgagaccc tgtctcaaaa aacaacaaca acaacaacaa    540
caacaacaaa aaaaaa                                                     556
```

<210> 664
<211> 373
<212> DNA
<213> Homo sapiens

<400> 664
```
agaatggaga ccaaacctgt gataacctgt ctcaaaaccc tcctcatcat ctactccttc     60
gtcttctgga tcactggggt gatcctgctg gctgccggag tctggggcaa acttactctg    120
ggctcctata tctcccttat tgccgagaac tccacatatg ctccctatgt gctcatcgta    180
actggcacca ctatcgttgc ctatcctcta gtttgattct tcttctccta ttcttctggg    240
ttctcttaca ttctagccgt ccgcctcatt gctggaattg ctctcgtcta caactacatc    300
cctcgatctt catcgcgtgc gttagtccgt ctcgtcgtct tgcttcgttt cctcctctct    360
cgtcatcctt ccc                                                        373
```

<210> 665

```
<211> 411
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(411)
<223> n = a,t,c or g



<400> 665
agaacgcaga acatccaggc atggatagac atgatctgtg tcagaaggcc aaactggccg      60
agcacgctga gcgagatgat gacatggcag cctgcatgaa gactgtaact gatcaaggag     120
ctgaattatc caatgaggag aggaatcttc tctcagatgc tcataccaat gctgtatgag     180
cccgtaggtc atcttggatg ggcgcatgac gtatcgaaca aaagaccgaa ggtgctgaca     240
cacagcagca gatggctcca gactgcagag agattttgc gacggagcta agagatatct      300
gcgatgatgt actgtctctt ttggaaaagc tcttgatccc caatgcttca catgcataga     360
gcttagtcta ctatttgcac atgatcggag attactaccg ttactggctt n              411




<210> 666
<211> 333
<212> DNA
<213> Homo sapiens




<400> 666
tggcggcggt ccgctgggga agatgccgcg ggcgcagttg gcggacccgt ggcagatgat      60
ggctgtggag agcccgtccg actgcgctga caatggacag caaattatgg atgaacctat     120
gggagaggac gagattagcc cacaaactga ataagtcagt atcaaagaag ttgctgtcac     180
acattgtgta aaggaaggac atgataaggc agatccttcc cagattgaac ttttaagagt     240
cttacggcag ggatcattgg gaaaggtgta cttaggtaag aaagtctcag gctctgatgc     300
taagcagctg tatgccatga aggtattgac gag                                  333




<210> 667
<211> 1991
<212> DNA
<213> Homo sapiens




<400> 667
agacgctgca ggaattcggc acgaggcgca tttcggcaag ttggagtgct tagtgcagtt      60
ggtgagagcg ggagctctca ctcttcgtct ccaccacacg tacgcgcag acgccagcgc      120
cacattgcag cctttggggg acatcctcag tgcctggtct ggctgattca agcaggagcc     180
aacattaaca aaccggattg tgagggtgaa actcccattc acaaggcagc tcgctctggg     240
agcctagaat gcatcagtgc ccttgtggcg aatggggctc acgtcgataa ccccaagaaa     300
ggcatcaggg ttctggagtg gttgtttgag tgacacagca caaggccttg atttcatcat     360
gcttttgctg tggatgtagt gtagcttgct gaacaggtat ggaagctgtc tttgctgtta     420
```

373

```
agtacttctc ccgtttgttt atcaacctgc agctaacagg atgtctgctt ttttacaggt    480
ttatttcaca gagcagtgta cattcttgtc ttccagggga acttcaacat ggagttactt    540
ttgatccctc agtttaatt cagtgtctaa aggtttacaa gttcaactta ctctatttta    600
ttcagctctt tcacttactc tgccatcact tcctacttga atctgagttt tagctactgt    660
agaggtctca gacctttcct ttttagtact attagccagg taaaactttg gttcttgtga    720
gtggtaggga tgagttttta ggacagtatt caaagccttt ttaaaggaac caactactca    780
aatgctctac aatgccaaaa atacaatact cctgcaggtt ttcccaagca aggccaaaac    840
aatcaaaatc tgacagaaaa acacagctgt tcagctctgg aatctgatga taggctactt    900
tttaatgtca ggacatcctt ctaaacttcc acttacagtg tcacatgtaa gcatgaaggc    960
tggctcgttg gtgagccatt gctttgtttt taggaagaca gttatgaatg ccatggacaa   1020
tctcagtaca tgttgtttgt tatgatttta ttcacgctaa aggaatgggt attaaaatta   1080
agtgcatata atatagaatt cagtttcaag tctgaagtta gcgtaaattt agattcttca   1140
gactaacata aaacatgatt ttgagaagtt aaataggaag atgccttttt tagaagttta   1200
gcatatttag tttatctccc aaatcttgct tagaaatcaa atgtatataa gagaagttag   1260
ttacagagct agattgatta actacttctt taatgaagat ttgctatgaa tttgtttact   1320
ctttcatacc accttcagat agctagtcag ttcagcagga gcagagacca ggttagcacg   1380
cggatggggt gtaattcagt gttttgtgt tgtacagcct gagaaatgcc agtggcctga   1440
cagcagcaga cattgcacaa acccagggtt tccaagagtg tgcccagttt ctcttgaacc   1500
tccagaattg tcatctgaac catttctata acaatggcat cttaaatggg ggtcatcaga   1560
atgtatttcc taatcatatt agtgtgggaa caaatcgaaa gagatgcttg gaagactcag   1620
aagactttgg agtaaagaaa gctagaactg aaggtgagac cgctttgcgg gtgggaagag   1680
cacacttatt tttcctttct gtaatatgtt ttctttttat ggctgagcgc accttcgaga   1740
tgagaccttc acttcaggtg gtaatgcgcc tggtggattg tgcggtgacg gtggagattt   1800
ctcctgtact gccactgcga agatgggact taacaaaagg gaatgtgagg gaaatactga   1860
tggcccaagt gtaaatgtct atgtggaact ttttgagcac ccatgtttac ctgccgtgaa   1920
ttagattttt taatttgttg tatctgtttg aaatatatct attaaaaaaa atctgccact   1980
gaaaaaaaaa a                                                         1991
```

```
<210> 668
<211> 1156
<212> DNA
<213> Homo sapiens
```

```
<400> 668
cagttttcaa aggttaagta agcactgaag tgtgaataca ttaagagaaa gatatgtaat     60
taaaaatcca ctaccaaaaa taaatatgag atatatgtgt atgactaata tgccagattt    120
acttttggag acttgtctga gtattatgaa tttttgtaag aaattcctaa gaatctttct    180
aatcttagca gttttcatta atgaaatggt ttttgaagga tttagcagga aatacatata    240
acttttgaaa cttatgttta tagctgaact tggtgactat gatcttgctg agcatagtcc    300
tgaacttgtc tcagagttca gattcgtgcc tattcagact gaagagatgg aactggctat    360
ttttgagaaa tggaaggaat acagaggtca aacaccagca caggctgaaa ccaattatct    420
gaataaagcc aaatggctag aaatgtatgg ggttgatatg catgtggtca aggctagaga    480
tgggaatgac tatagtttgg gactaacacc aacaggagtc cttgtttttg aaggagatac    540
caaaattggc ttatttttt ggccgaagat aaccagattg gatttтаaga agaataaatt    600
aaccttggtg gttgtagaag atgatgatca gggcaaagaa caggaacata catttgtctt    660
tagactggat catccaaaag catgcaaaca tttatggaaa tgtgctgtgg agcatcatgc    720
tttcttccgc cttcgaggcc ccgtccaaaa gagttctcat cgatcaggat ttattcgact    780
aggatcacga tttagatata gtgggaaaac agagtatcag accacaaaaa ccaataaagc    840
aagaagatca acatcctttg aaagaaggcc cagcaaacga tattctagac gaactctaca    900
aatgaaagca tgtgctacaa aacctgaaga acttagtgtt cacaataatg tttcgaccca    960
aagtaatggc tcccaacagg cttgggggat gagatctgct ctgcctgtga gtccttccat   1020
ttcctctgct cctgtgccag tggagataga gaatcttcca cagagtcctg gaacagacca   1080
gcatgacagg aaatggctct ctgctgccag cgactgctgt caacgtggtg gaaaccagtg   1140
gaacacaagg gccttg                                                    1156
```

<210> 669
<211> 539
<212> DNA
<213> Homo sapiens

<400> 669
aagaatccag atggtggcct tttgggggca ttaggatcct tcttcttgcc tcccttagct   60
ggtccataat ccttcatttc ccgatcatag cacacttcat ccgcctttgc catttcacca   120
aatttaaatt tctctttact ggacattgtc ttccacctcc cagagcattt cttggaaaat   180
tctgcaaaat tgacagggac ttctgggttt ttcttcttat gttcttctct gcattggaac   240
aggaattaaa agaaattaaa gaggccgggc gcagtggctc acgcctgtaa tcccagtaat   300
ttgggaggcc aaggcgggcg gatcacctga ggtccagagt tcaagaccag cctgaccaac   360
atggagaaac cctgtctcta ctaaaaatac aaaaaattag ccgggtgtgg tggtgcatgc   420
ctgtagtccc agctactccg gaggctgagg caggagaatg gcttgagcct gggaggcgga   480
ggttgctgtg agccgagatc gcacctttgc actctagcct gggcaacaag agcgagact   539

<210> 670
<211> 682
<212> DNA
<213> Homo sapiens

<400> 670
ctgggggtcc tggctgaact ggtctggtgt taaggggggcc ccctgacccc cttgaagggg   60
gggctgggct gggtgagggg gggtggccga cccccagcca ggttcccagg caggatgagc   120
tggggttggg gtggctaggc cgagggcctt gggagctggg cagtctgggc tgggctgggc   180
tgggcagggc gccacatgga agctggagga gcaacgggag cgctgggcgt ggggagcaaa   240
ttgcccagtg ccttctgttt cccaggcagc tctgtggcca tggatatgtt ccagaaggta   300
gagaagatcg gagagggcac ctatgggggtg gtgtacaagg ccaagaacag ggagacaggg   360
cagctggtgg ccctgaagaa gatcagactg gatttgtgag tgctgggacg gcccctgagt   420
tacccaccct gggccatcac aacctgggcg ctccctgatc cgttccctct ttcctggagt   480
ccacgtttaa ctcctctggg tgctgcccag cagcccttac ctgtcctctc cccagttcac   540
tgccttctga ccagcctttg ccggggccct gactgtggag tttggtggat gacgtgccaa   600
ggagcacagg tctccattgc cggggccctg gtcattctgt ggggttaagg agaagccgat   660
ccccctggct ggaagtgccc tt   682

<210> 671
<211> 536
<212> DNA
<213> Homo sapiens

<400> 671

375

```
gcctgtgtgt ctctgtgctt tgctccttct cctacctcca aaatggctgg actgcctccg      60
atccagttca tggctactgg ttcaggggca ggggaccatg taagccggaa cattccagtg     120
gccacaaaca acccagttcg agcagtgcag gaggagactc gggaccgatt ccacctcctt     180
ggggacccac agaacaagga ttgtaccctg agcatcagag acaccagaga gagtgatgca     240
gggacatacg tcttttgtgt agagagagga aatatgaaat ggaattataa atatgaccag     300
ctctctgtga atgtgacagc gtcccaggac ctactgtcaa gatacaggct ggaggtgcca     360
gagtcggtga ctgtgcagga gggtctgtgt gtctctgtgc cctgcagtgt cctttacccc     420
cattacaact ggactgcctc tagccctgtt tatggatcct gggtcaagga aggggccgat     480
ataccatggg atattccagt ggccacaaac accccaagtg gaaaagtgca agagga         536
```

```
        <210> 672
        <211> 1038
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 672
tttcgtccct ggagctggcg aggtgtccgg ttgcggagcc ggcggcgtct ctggaaatgc      60
atcctgcatc cccgcatgga taacagctgc agctatgtca gaattgcaca aagaggggag     120
agtgtcattg tgtgcctttt gacacataca ttaagaccaa aaaggaaaaa aagcgtctat     180
ctgtgctgcc accgaccaga ctcatggagg ccagattttc tccaattaac cagatcttgc     240
cctggtgcag acaagactta gccatcagca tcagcaaagc catcaacacc caggaggccc     300
ccgtgaagga gaagcacgcc cggcgcatca ttctgggcac acaccacgag aaggggggctt     360
tcaccttctg gtcctatgcc attgggctgc cgctgcccag cagctccatt ctcagctgga     420
agttctgcca cgtcctccac aaggtccttc gagacgggca ccccaatgtg ctgcatgact     480
gccagcggta ccgcagcaac atccgggaga ttggagacct gtggggacat ttgcatgacc     540
gctacggaca gctggtgaat gtctacacca agctgctgct gaccaagatc tccttccacc     600
tcaagcatcc ccagtttccc gcgggcctgg aggtgacaga tgaggtactg gagaaggcag     660
ctgggaccga tgtcaacaac atgtgagtca ctctgcatgg ctacatggcc agttcccctc     720
ggcttcccca ttccttccta ccgcgtctca cgcccaggcg tccgcatggg gcagtggggt     780
tgaatgagtc cgtggctttg ttggttgatg ctcacgctcc cagggacaga gggtgaagtt     840
aaaagggtgg ggtgtacttg aaggactgtc gtcctggcag aggcacgctg tctcaccaga     900
gccatggtgt cggcggtgcc cccgtcccca ctggaggggg cgtctcaaga cgagtgggtg     960
ggtccaccca cccttttca tttcttcccc cacttctctt gcgtagcttc cagctcactg    1020
tggagatgtt tgattacc                                                1038
```

```
        <210> 673
        <211> 676
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 673
tttcgtccgg gcggtcgcat tgttttcctc cgcggatccg cggctggact tggacccagg      60
gctctcccga cagcgccctg gaacccaaat tcaagcacca tccaattcgg acgctcatcg     120
catctcgcct gagcacaacc acggattgcg aactcagcgc agcgcgtggc cgctggccgc     180
ccgcggcgat ctcgatcccg ctgacccgaa tcctggagtc agaggtttcc tatcccccctc     240
aagcccccac aggagtcacc aacccagggc cggcttatgg gtgaggggc accccctggg     300
gcctgagctg ccccgcacag gatgccccgt gccccccact tcatgccctt gctgctactg     360
ctgctgctgc tctcacttcc ccatactcag gccgcctttc cccaggaccc cctccctctg     420
```

```
ttgatctctg accttcaagg tacttcccca ttatcctggc ttccgagcct ggaggatgat    480
gctgtggctg cataacttgg gctggacttt cagagattcc tgaccttgaa ccggaccttg    540
ctagtggctg cccgggatca cgttttctcc ttcgatcttc aagccgaaga agaaggggag    600
gggctggtgc ccaacaagta tctaacatgg agaagccaag atgtggagaa ctgtgctgta    660
cggtgaaagc tgacgg                                                     676
```

```
        <210> 674
        <211> 418
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 674
tctcttcata cagacacacg tgacatttgg tgccaaagac ccgggggagg gggactcctt     60
cgggagacca gtccctgtc ctcaccctca ctccatgagg agatccacct accatcttgg    120
gtcctcagac caaccagccc aaggaacatc tcaccaattt caaatcaggt aagcggtctt    180
ttcactctct tctccaacct ctcttgctgt tgctccaccc ttcaatctct cccttcctta    240
attttggttc ctttcccttt ctggtagaga cagaagagac gtgttttatc cataaactca    300
aaactccagc gctggtcact ccagacagtc ttccgttggt gtttaatcac tgtggggatg    360
cctgcctgat tattcaccca catttcaggg atgtcgaatt ccaccacacg ggtaatac      418
```

```
        <210> 675
        <211> 1423
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 675
tgctgttcaa caaaaaacat atcaggggac aaagcatgta acttgatgat cttcgacact     60
cgaaaaacag ctagacaacc caactgctac ctatttttct gtcccaacga ggaagcctgt    120
ccattgaaac cagcaaaagg acttatgagt tacaggataa ttacagattt tccatctttg    180
accagaaatt tgccaagcca agagttaccc caggaagatt ctctcttaca tggccaattt    240
tcacaagcag tcactcccct agcccatcat cacacagatt attcaaagcc caccgatatc    300
tcatggagag acacactttc tcagaagttt ggatcctcag atcacttgga gaaactattt    360
aagatggatg aagcaagtgc ccagctcctt gcttataagg aaaaaggcca ttctcagagt    420
tcacaatttt cctctgatca agaaatagct catctgctgc ctgaaatgt gagtgcgctc    480
ccagctacgg tggcagttgc ttctccacat accacctcgg ctactccaaa gcccgccacc    540
cttcttaccc accaatgctt cagtgacacc ttctgggact tcccagccac agctggccca    600
ccacagctcc acctgtaacc actgtcactt ctcagcctcc cacgaccctc atttctacag    660
tttttacacg ggctgcggct acactccaag caatggctac aacagcagtt ctgactacca    720
cctttcaggc acctacggac tcaaaaggca gcttagaaac cataccgttt acagaaatct    780
ccaacctaac tttgaacaca gggaatgtgt ataaccctac tgcactttct atgtcaaatg    840
tggagtcttc cactatgaat aaaactgctt cctgggaagg tagggaggcc agtccaggca    900
gttcctccca gggcagtgtt ccagaaaatc agtacggcct tccatttgaa aaatggcttc    960
ttatcgggtc cctgctcttt ggtgtcctgt tcctggtgat aggcctcgtc ctcctgggta   1020
gaatcctctc ggaatcactc cgcaggaaac gttactcaag actggattat ttgatcaatg   1080
ggatctatgt ggacatctaa ggatggaact cggtgtctct taattcattt agtaaccaga   1140
agcccaaatg caatgagttt ctgctgactt gctagtctta ggaggttgta ttttgaagac   1200
aggaaaatgc cccttctgc tttccttttt ttttttgaa acagagtctt gttttgttgc   1260
ccaggctgga gggcagaacc acaatttggg ttttaaccga accctccgtt tcttgggtta   1320
```

```
aagcaattct cctgcctcac cctcctaaga atctggaatt acgggcatgg gccaccaccc    1380
cgggggatt  tttggatttt tagtaaagac ggggtttcac cat                      1423
```

```
        <210> 676
        <211> 621
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 676
cggggaggta ccaggtattt gagagcaatc gccaccgctt tcctggaact tgaggctgga     60
gtgcagcggt gtgatctcgg tttactgcaa cctccacctc ctgagttcca gcgattctcc    120
tgcctcagcc tcctgagtag ctgggattac agtaaataca atcaaggggc atcttaaatt    180
tttgctggaa gtggagtcat gagactaaag atatctcttt taaaagaacc aaagcatcaa    240
gaattagtaa gctgtgtggg ctggactact gctgaagagc tgtattcatg tagtgatgat    300
caccacatag tgaagtggaa cttgttaacc agtgaaacaa ctcaaatagt aaagcttcct    360
gatgatattt accctattga ttttcactgg tttccaaaaa gtttgggtgt aaagaaacaa    420
acccatgcag aaagctttgt cctcacaagt tctgatggta aatttcatct gatttccaag    480
ttaggaagag tggaaaaaag tgtagaagct cactgtggag cagtacttgc aggaagatgg    540
aattatgaag gaacagcatt agttacagtt ggagaagatg gacaaatata aatttggtca    600
aagactggga tgcttatatc t                                               621
```

```
        <210> 677
        <211> 1258
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 677
cccgggtcga cgatttcgtg cggcgggcta tccggtcctc ggctgcggcg ggcaccatgg     60
tcggtggcga ggcggctgcc gcagtggagg agctggtttc ggggggtgcgg caggcggccg    120
acttcgcgga gcagttccgc tcctactcag agagcgagaa gcaatggaag gcccgcatgg    180
aattcatcct gcgccacctg cccgactacc gcgacccgcc cgacggcagt ggccgcctgg    240
accagctgct ctccctctcc atggtctggg ccaaccatct cttcctaggc tgcagttaca    300
ataaagacct tttagacaag gtgatggaaa tggccgatgg gattgaagtg gaagacctgc    360
cacaatttac taccagaagt gaattaatga aaaagcatca aagctaagcc agaagattta    420
tcacattttc atcatcagct acaggattag aaaggaggct gggatgaatg tgacatagac    480
cacagcagct ctcttaagac tcctggtatt accaacataa agaggcaggt ggaatgagaa    540
ggactctgtc tagattggct ttttaacat tctcatttttc ccaggagtta tcactgtaaa    600
agtatgcatg gatatttatg tatttataaa tcatgcactc taagatgagt tcatcaacat    660
tgtaaaagcc ctctttttctg ttttcaggtt tttttttttc ttatcgacaa ggtctcactc    720
tgtcgcccag gcagaagcac aaaggtgcag tattggctca ttgcagcctc gaactcctgg    780
gctcatattt tcagggtttt ttgtttttttg ttttgttttt ttgagacaga gtcttgctct    840
gttgcccagg cagtagtgca gtggcgcgat atattttcag ttttttaaacg tcagaatttt    900
tgtttaaaat gcctttttgg gctgggcaca gtggcttatg cccataataa tcccagcact    960
ttgggaggcc gaggtgagca gatcacctga ggttaggagt ttgagaccag cctggccaac    1020
acgatgaaac cccgtctcta ctaaaaatac aaacaaaatt agctgggcat ggtggcggac    1080
atctgtaatc ccagctactc aggaggctga agcagaagaa ctgcttgaac ctgggaggtg    1140
gaggttgcag tgagccaaga tcgcaccatt gcactccatc ctgggcgaca aaaatgaaac    1200
accgtctcaa aaaaaataaa aataataaaa taaaatgcct ttttgttgtt gctcgtgc      1258
```

```
        <210> 678
        <211> 1289
        <212> DNA
        <213> Homo sapiens

        <220>  .
        <221> misc_feature
        <222> (1)...(1289)
        <223> n = a,t,c or g
```

```
        <400> 678
cgccaccggt atgcaccatt accatccccg cggctcagtc gagcattcgt ccacgggccg      60
gagggcgggg cgcccgggtc cggagggagc cacgcccnac cacaacaaac gcgtctgcgc     120
atgcccgggc gctgggttca ggggctttcc gccgctctgg gttcacagct ggacgtcggg     180
agtgctagtt tggagtacgc catttgagag taggcgtgag aagttgctct gtgtgctgag     240
cgttctaaag gaaggcgtcc gttggccttc gtacccgtct tgagtgaggt gacgagtgtt     300
ttctagtact ggggtcggcc gcgcagccct ctcaggggtg ggtggcagga agagtgccgg     360
gtcccgcgtg gtgcaaaagg tgggttcagg tttgcggcca cacagcgcta ctcaggactt     420
tttagtcttg tttattttct ccgtgcctgt tcccgccccc cgcagctcca cctctgggag     480
aggggcgggt tcagctccag gaggcgggga cttcccggct tggcgtggct ggggtgtccc     540
gtggacccca gtctcggcgc ggtgacccac ttatgggact tggcctttct ttgttgtttg     600
tttaaggcag ggtttctcag cctgggcact actgaggttt tgggccggct aattctgtct     660
gggttgggga gggtgctgtc ccgtgcttcg caggttgtgt agctgcatcc cccgcctcta     720
cccagtggat gcaagtagca gccccagtga accaaaaatg cccccagact ttgccaaata     780
tcccctcccg gggaagatcg cctcgcttga gaaccactgt tggaggagag cctgggtttt     840
cgggaggtaa ccgtttacaa aggggagaac ggtaagaagc cggaagcaac gatgacttag     900
ctacgtgaaa gacttgcggc cgggctcgcc cctcttctag aagccgtcag tttgggtctc     960
gcgtctggaa tcaccgtcaa ggagtcagat ccagccccgg agagggagca gggtcgaggt    1020
ctccttgcag aaggcgccac cgcaggaagc acaggcgcaa cgtgcagtct ccctagcgga    1080
ggcgctcgcg atcctgcagc cgccggtccg ggaggtgctc ggtagccctc cttggtgcct    1140
gtccggtagc tggtcactct cgggggaagg tcgtgtgcag aagggcacat gcgatcacac    1200
agagacggcg ttgctgcggc tttgacccga tggtgcaccc gaaagaacac agagggtgaa    1260
gggagagatc caggaagtgg tcgcggagc                                      1289
```

```
        <210> 679
        <211> 539
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 679
agtctcgctc ttgttgccca ggctagagtg caaaggtgcg atctcggctc acagcaacct      60
ccgcctccca ggctcaagcc attctcctgc ctcagcctcc ggagtagctg ggactacagg     120
catgcaccac cacacccggc taattttttg tattttttagt agagacaggg tttctccatg     180
ttggtcaggc tggtcttgaa ctctggacct caggtgatcc gcccgccttg gcctcccaaa     240
ttactgggat tacaggcgtg agccactgcg cccggcctct ttaatttctt ttaattcctg     300
ttccaatgca gagaagaaca taagaagaaa aacccagaag tccctgtcaa ttttgcagaa     360
ttttccaaga aatgctctgg gaggtggaag acaatgtcca gtaaagagaa atttaaattt     420
```

```
ggtgaaatgg caaaggcgga tgaagtgtgc tatgatcggg aaatgaagga ttatggacca      480
gctaagggag gcaagaagaa ggatcctaat gcccccaaaa ggccaccatc tggattctt       539
```

```
        <210> 680
        <211> 349
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 680
ttagaagtga gttaaatttt cacattccca agggtacttt tgtctcgggt tgttgaatat      60
attttaaagt gtttataata atcacttcaa aatatttagg taattaactg taaattatgt     120
tttggtattc tccagggaca gtggccttag agctattgag aatttgatgc aaaagaaggg     180
gaaatttgat tacatactgt tagagaccac tggattagca gaccctggta agaagtgaga     240
ttattaataa ccagaatata gttctgtgat atattgtaaa tagatgtatt agaggaatat     300
ctaaaatgag gattaaagct tttgttagta ttaaaccaaa aactttttt                 349
```

```
        <210> 681
        <211> 329
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 681
ggcacgaggc ggcgctgtgt cggacccgtg ctgtggctgc cgagaggcat tttctgcgag      60
tgtttctctt cttcaggccc tttcggggtg taggcactga gagtggatcc gaaagcggaa     120
gttccaaagc caaggagcct agaacgccct caagcagcta cgggaccgcc caataccgac     180
gctggccaat agcccaggag tataaacact gcaccgcgca caatgacaca ggcactctct     240
gctccgagct gagagaacca tggaggagac cgcagtagac agagccactg aactcatgac     300
aacgtgaagc gaactagaaa gtaatactc                                       329
```

```
        <210> 682
        <211> 574
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 682
acgagggctc cagtcaggcc aatacgctcc gctcacggaa ggaaaacaga aataacttgc      60
tggcttgtct ggagtcacat gtacttaggt gacaatttac agaaagtcat ctctgcagct     120
tgatgggcga caaccctttt caaccaaaaa gtaattcaaa aatggcagaa ctgtttatgg     180
aatgtgaaga agaggagctg gaaccatggc agaagaaagt aaaagaagtt gaggatgacg     240
atgatgatga gccaatcttt gttggcgaga tatcaagttc aaaaccagca atttcaaata     300
```

```
ttttgaacag agttaacccc agctcatatt caaggggact aaagaatggt gcactcagtc    360
gaggtattac tgctgcattc aagcctacaa gtcaacacta cacgaatcca acatcaaatc    420
cagtgcctgc ctcaccaata aattttcatc ctgagtctag atcttcagat agttctgtta    480
ttggtcagcc tttttctaaa cctgtaagtg tttctaaaac tatacggcca gctcagggat    540
ccattggatg ttgtttatca atatcaacag tacc                                574
```

```
        <210> 683
        <211> 627
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 683
cttgatgttt ttcacttgaa gacattttga actttttctt acagggtttc tctgctgggc     60
tgtttgcatt ctaccatgat aaagatggaa atcctctcac ttcaagattt gcagatggcc    120
tcccaccttt taattatagt ctgggattat atcaatggag tgataaagta gttcgaaaag    180
tggagagatt atgggatgtt cgagataata agatagttcg tcacactgtg tatctcctgg    240
taacgcctcg tgttgttgag gaagcacgaa aacattttga ttgtccagtt ctagagggaa    300
tggaacttga aaatcaaggt ggtgtgggca ctgagctcaa ccattgggaa aaaaggttat    360
tagagaatga agcgatgact ggttctcaca ctcagaatcg agtactctct cgaatcactc    420
tggcattaat ggaggacact gggagacaga tgctgagccc ttactgtgac acgctcagaa    480
gtaacccact gcagctaact tgcagacagg accagagagc agttgccgtg gtgtaatttg    540
cagaagttcc ctaagccttt accacaggaa taccagtact ttgatgaact cagtggaata    600
cctgcagaag atttgcctta ttatggg                                        627
```

```
        <210> 684
        <211> 1271
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 684
gcggcgcgcc gccgcagaca gctggtgtcc cgccggagaa cggccgagat atccccgccg     60
gcggaggagc agccccagcg ccaggcctcc cgacgtcccc gggcagcagc ccaaggccgc    120
gaagtccccg tctccagttc agggcaagaa gagtccgcga ctcctatgca tagaaaaagt    180
aacaactgat aaagatccca aggaagaaaa agaggaagaa gacgattctg ccctccctca    240
ggaagtttcc attgctgcat ctagacctag ccggggctgg cgtagtagta ggacatctgt    300
ttctcgccat cgtgatacag agaacacccg aagctctcgg tccaagaccg gttcattgca    360
gctcatttgc aagtcagaac caaatacaga ccaacttgat tatgatgttg gagaagagca    420
tcagtctcca ggtggcatta gtagtgaaga ggaagaggag gaggaagaag agatgttaat    480
cagtgaagag gagataccat tcaaagatga tccaagagat gagacctaca aaccccactt    540
agaaagggaa accccaaagc cacggagaaa atcagggaag gtaaaagaag agaaggagaa    600
gaaggaaatt aaagtggaag tagaggtgga ggtgaaagaa gaggagaatg aaattagaga    660
ggatgaggaa cctccaagga agagaggaag aagacgaaaa gatgacaaaa gtccacgttt    720
acccaaaagg agaaaaaagc ctccaatcca gtatgtccgt tgtgagatgg aaggatgtgg    780
aactgtcctt gcccatcctc gctatttgca gcaccacatt aaataccagc atttgctgaa    840
gaagaaatat gtatgtcccc atccctcctg tggacgactc ttcaggcttc agaagcaact    900
tctgcgacat gccaaacatc atacagatca aagggattat atctgtgaat attgtgctcg    960
ggccttcaag agttcccaca atctggcagt gcaccggatg attcacactg gcgagaagcc   1020
attacaatgt gagatctgtg gatttacttg tcgacaaaag gcatctctta attggcacat   1080
```

```
gaagaaacat gatgcagact ccttctacca gttttcttgc aatatctgtg gcaaaaaatt      1140
tgagaagaag gacagcgtag tggcacacaa ggcaaaaagc caccctgagg tgctgattgc      1200
agaagctctg gctgccaatg caggcgccct catcaccagc acagatatct gggcactaa       1260
cccagagtcc c                                                          1271
```

```
       <210> 685
       <211> 685
       <212> DNA
       <213> Homo sapiens

       <220>
       <221> misc_feature
       <222> (1)...(685)
       <223> n = a,t,c or g
```

```
       <400> 685
atgagggtcg tcccacgcgt ccgcttggtc catgtgagag aagctggctg ctgaaatgac       60
tgcgaaccgg cttgcagaga gccttctggc tttgagccaa caggaagaac tagcggattt      120
gccaaaagac tacctcttga gtgagagtga agatgagggg gacaatgatg gagagagaaa      180
gcatcaaaag cttctggaag caatcagttc ccttgatgga aagaataggc ggaaattggc      240
tgagaggtct gaggctagtc tgaaggtgtc agagttcaat gtcagttctg aaggatcagg      300
agaaaagctg gtccttgcag atctgcttga gcctgttaaa acttcatctt ctttggccac      360
tgtgaaaaag caactgagta gagtcaaatc aaagaagaca gtggagttac ctctgaacaa      420
agaagagatt gaacggatcc acagagaagt agcattcaat aaaaccgcac aagtcctctc      480
caaatgggac cctgtcgtcc tgaagaaccg gcaggcagag cagctggttn ttcccctgga      540
gaaagaggag ccagccattg ctcccattga acatgtgctc agtggctgga aaggcagaac      600
tcccctggag cangaaattn tcaacctnct ncatangaac aagcagncag tgacagaccc      660
tttactgacc cctgtggaaa ggcct                                           685
```

```
       <210> 686
       <211> 962
       <212> DNA
       <213> Homo sapiens
```

```
       <400> 686
cgcggccgcg tcgactttaa gattaaattc atgtattgaa aatattgttc agaccccatg       60
tgacataact ggagccagtg cagtgccatg aagaactacg agattagcct ggatattaac      120
ttgtcttcta gagaatagat ttcatgttcc attcttctgc aatggttaat tcacacagaa      180
aaccaatgtt taacattcac agaggatttt actgcttaac agccatcttg ccccaaatat      240
gcatttgttc tcagttctca gtgccatcta gttatcactt cactgaggat cctggggctt      300
tcccagtagc cactaatggg gaacgatttc cttggcagga gctaaggctc cccagtgtgg      360
tcattcctct ccattatgac ctctttgtcc accccaatct cacctctctg gactttgttg      420
catctgagaa gatcgaagtc ttggtcagca atgctaccca gcttatcatc ttgcacagca      480
aagatcttga aatcacgaat gccacccttc agtcagagga agattcaaga tacatgaaac      540
caggaaaaga actgaaagtt ttgagttacc ctgctcatga acaaattgca ctgctggttc      600
cagagaaact tacgcctcac ctgaaatact atgtggctat ggacttccaa gccaagttag      660
gtgatggctt tgaagggttt tataaaagca catacagaac tcttggtggt gaaacaagaa      720
ttcttgcagt aacagatttt gagccaaccc aggcacgcat ggctttccct tgctttgatg      780
```

```
aaccgttgtt caaagccaac tttttcaatca agatacgaag agagagcagg catattgcac   840
tatccaacat gccaaaggtt aagacaattg aacttgaagg aggtcttttg gaagatcact   900
ttgaaactac tgtaaaaatg agtacatacc ttgtagccta catagtttgt gatttccact   960
ct                                                                   962
```


```
            <210> 687
            <211> 676
            <212> DNA
            <213> Homo sapiens
```


```
            <400> 687
accgatcgaa gatccctcgg agcgacccac gcgtccggac gccagcgcct gcagaggctg    60
agcagggaaa aagccagtgc cccagcggaa gcacagctca gagctggtct gccatggaca   120
tcctggtccc actcctgcag ctgctggtgc tgcttcttac cctgcccctg cacctcatgg   180
ctctgctggg ctgctggcag cccctgtgca aaagctactt cccctacctg atggccgtgc   240
tgactcccaa gagcaaccgc aagatggaga gcaagaaacg ggagctcttc agccagataa   300
aggggcttac aggagcctcc gggaaagtgg ccctactgga gctgggctgc ggaaccggag   360
ccaactttca gttctaccca ccgggctgca gggtcacctg cctagaccca aatccccact   420
ttgagaagtt cctgacaaag agcatggctg agaacaggca cctccaatat gagcggtttg   480
tggtggctcc tggagaggac atgagacagc tggctgatgg ctccatggat gtggtggtct   540
gcactctggt gctgtgctct gtgcagagcc caaggaaggt cctgcaggag gtccggagag   600
tactgagacc gggaggtgtg ctctttttct gggagcatgt ggcagaacca tatggaagct   660
gggccttcat gtggca                                                   676
```


```
            <210> 688
            <211> 639
            <212> DNA
            <213> Homo sapiens
```


```
            <400> 688
cggacgcgtg ggcgtatttg cgcgtatgag atgcattgtc tcttcctctg gagttgagct    60
gaatgaatac ctccgaagcc gttttgttct ccaaatggga atagctccac tataccagcc   120
tcgtcttcct tccggggggac aacgtgggtc agggcacaga gagatattta atgtcaccct   180
cttggggctt tcatgggact ccctctgcca cattttttgg aggttgggaa agttgctaga   240
ggcttcagaa ctccagccta atggatccca aactcgggag aatggctgcg tccctgctgg   300
ctgtgctgct gctgctgctg ctggagcgcg gcatgttctc ctcaccctcc ccgcccccgg   360
cgctgttaga gaaagtcttc cagtacattg acctccatca ggatgaattt gtgcagacgc   420
tgaaggagtg ggtggccatc gagagcgact ctgtccagcc tgtgcctcgc ttcagacaag   480
agctcttcag aatgatggcc gtggctgcgg acacgctgca gcgcctgggg gcccgtgtgg   540
cctcggtgga catgggtcct cagcagctgc ccgatggtca gagtcttcca atacctcccg   600
tcatcctggc cgaactgggg agcgatccca cgaaaggct                          639
```


```
            <210> 689
            <211> 116
```

```
<212> DNA
<213> Homo sapiens




<400> 689
tttttttttt ttgagatgga gtcttgctct gtcacccagg ctggagtgcc gtggcacgat     60
ctcagctcac tgcaacctcc acctcccagg ttcaagcgat tctcgtgcct cagcct        116




<210> 690
<211> 509
<212> DNA
<213> Homo sapiens




<400> 690
acaaacaggt ggggtcaagc acggagagag aactgcccag ggtataaaaa gggcccacag     60
gagaccggct ctaggatccc aaggcccaac tccccgaacc actcagggtc ctgtggacag    120
ctcacctagt ggcaatggct ccaggctccc ggacgtccct gctcctggct tttgccctgc    180
tctgcctgcc ctggcttcaa gaggctggtg ccgtccaaac cgttccgtta tccaggcttt    240
ttgaccacgc tatgctccaa gcccatcgcg cgcaccagct ggccattgac acctaccagg    300
agtttgaaga aacctatatc ccaaaggacc agaagtattc attcctgcat gactcccaga    360
cctccttctg cttctcagac tctattccga caccctccaa catggaggaa acgcaacaga    420
aatccaatct agagctgctc cgcatctccc tgctgctcat cgagtcgtgg ctggagcccg    480
tgcggatcct catgagtata gtccccaac                                      509




<210> 691
<211> 1362
<212> DNA
<213> Homo sapiens




<400> 691
tttcgtgaaa cttatcaaga aacaccaggc tgctatggag aaagaggcta aagtgatgtc     60
caatgaagag aaaaaatttc agcaacatat tcaggcccaa cagaagaaag aactgaatag    120
ttttctcgag tccagaaaaa gagagtataa acttcgaaaa gagcagctta agaggagct    180
aaatgaaaac cagagtaccc ccaaaaaaga aaaacaggag tggctttcaa agcagaagga    240
gaatatacag catttccaag cagaagaaga agctaacctt cttcgacgtc aaagacaata    300
cctagagctg gaatgccgtc gcttcaagag aagaatgtta cttgggcgtc ataacttaga    360
gcaggacctt gtcagggagg agttaaacaa aagacagact cagaaggact tagagcatgc    420
catgctactc cgacagcatg aatctatgca agaactggag ttccgccacc tcaacacaat    480
tcagaagatg cgctgtgagt tgatcagatt acagcatcaa actgagctca ctaaccagct    540
ggaatataat aagcgaagag aacgagaact aagacgaaag catgtcatgg aagttcgaca    600
acagcctaag agtttgaagt ctaaagaact ccaaataaaa aagcagtttc aggataccctg    660
caaaatccaa accagacagt acaaagcatt aagaaatcac ctgctggaga ctacaccaaa    720
gagtgagcac aaagctgttc tgaaacggct caaggaggaa cagacccgga aattagctat    780
cttggctgag cagtatgatc acagcattaa tgaaatgctc tccacacaag ccctgcgttt    840
ggatgaagca caggaagcag agtgccaggt tttgaagatg cagctgcagc aggaactgga    900
```

```
gctgttgaat  gcgtatcaga  gcaaaatcaa  gatgcaagct  gaggcacaac  atgatcgaga      960
gcttcgcgag  cttgaacaga  gggtctccct  ccggagggca  ctcttagaac  aaaagattga     1020
agaagagatg  ttggctttgc  agaatgagcg  cacagaacga  atacgaagcc  tgttggaacg     1080
tcaagccaga  gagattgaag  cttttgactc  tgaaagcatg  agactaggtt  ttagtaatat     1140
ggtcctttct  aatctctccc  ctgaggcatt  cagccacagc  tacccgggag  cttctggttg     1200
gtcacacaac  cctactgggg  gtccaggacc  tcactggggt  catcccatgg  gtggcccacc     1260
acaagcttgg  ggccatccaa  tgcaaggtgg  accccagcca  tggggtcacc  cttcaaggcc     1320
caatgcaaag  gggtacctcg  aggagcagta  tgggagtccg  ct                        1362
```

```
<210> 692
<211> 503
<212> DNA
<213> Homo sapiens
```

```
<400> 692
gatcacgtgg  gcagctccgg  gcgcggcgct  tgttttggtt  tccttctaac  ttgcccacgg      60
cagcttcggg  gtgagcgact  ttcctgcacc  agctgccgcg  cctgctcaca  ccctgacctc     120
gttttcgggc  tctctgagcc  cgcagttccg  caagcccctg  gggcgggctc  ctgccatgcc     180
gctagtccgc  tacaggaagg  tggtcatcct  cggataccgc  tgtgtaggga  agacatcttt     240
ggcacatcaa  tttgtggaag  gcgagttctc  ggaaggctac  gatcctacag  tggagaatac     300
ttacagcaag  atagtgactc  ttggcaaaga  tgagtttcac  ctacatctgg  tggacacagc     360
agggcaggat  gagtacagca  ttctgcccta  ttcattcatc  attggggtcc  atggttatgt     420
gcttgtgtat  tctgtcacct  ctctgcatag  cttccaagtc  attgagagtc  tgtaccaaaa     480
gctacatgaa  ggccatggga  aaa                                                503
```

```
<210> 693
<211> 1671
<212> DNA
<213> Homo sapiens
```

```
<400> 693
gcggcttgtg  tccacgggac  gcggtacgga  tgcttctccg  gccatgagga  aaccagccgc      60
tggcttcctt  ccctcactcc  tgaagggtga  gaggtttaca  cctgctccaa  cagactctcc     120
ccgggctagt  cctctccctc  ccgagagctc  tgcttttacg  gtttctggat  cgcttcctca     180
tggtggtcgc  gctgggtcgg  ctccctaggt  cctggatac  tcccatctcc  ccccgcccgc     240
ggccggacct  ttgcctctgt  ctctagactc  cccccgccct  ggtcagcagg  ataaccctc     300
accccgttcc  taatttgcca  gtctgggtct  gtctgccctg  gtctcggagc  gggtttgggg     360
gttcggtcct  ttcatcatcc  ggtcgcccgc  tccgcagtgc  tgctcctgcc  tctggcacct     420
gccgcagccc  aggattcgac  tcaggcctcc  actccaggca  gccctctctc  tcctaccgaa     480
tacgaacgct  tcttcgcact  gctgactcca  acctggaagg  cagagactac  ctgccgtctc     540
cgtgcaaccc  acggctgccg  gaatcccaca  ctcgtccagc  tggaccaata  tgaaaaccac     600
ggcttagtgc  ccgatggtgc  tgtctgctcc  aacctccctt  atgcctcctg  gtttgagtct     660
ttctgccagt  tcactcacta  ccgttgctcc  aaccacgtct  actatgccaa  gagagtcctg     720
tgttcccagc  cagtctctat  tctctcacct  aacactctca  aggagataga  agcttcagct     780
gaagtctcac  ccaccacgat  gacctccccc  atctcacccc  acttcacagt  gacagaacgc     840
cagaccttcc  agccctggcc  tgagaggctc  agcaacaacg  tggaagagct  cctacaatcc     900
tccttgtccc  tgggaggcca  ggagcaagcg  ccagagcaca  agcaggagca  aggagtggag     960
cacaggcagg  agccgacaca  agaacacaag  caggaagagg  ggcagaaaca  ggaagagcaa    1020
```

```
gaagaggaac aggaagagga gggaaagcag gaagaaggac aggggactaa ggagggacgg    1080
gaggctgtgt ctcagctgca gacagactca gagcccaagt ttcactctga atctctatct    1140
tctaacccct cctcttttgc tccccgggta cgagaagtag agtctactcc tatgataatg    1200
gagaacatcc aggagctcat tcgatcagcc caggaaatag atgaaatgaa tgaaatatat    1260
gatgagaact cctactggag aaaccaaaac cctggcagcc tcctgcagct gccccacaca    1320
gaggccttgc tggtgctgtg ctattcgatc gtggagaata cctgcatcat aacccccaca    1380
gccaaggcct ggaagtacat ggaggaggag atccttggtt tcgggaagtc ggtctgtgac    1440
agccttgggc ggcgacacat gtctacctgt gccctctgtg acttctgctc cttgaagctg    1500
gagcagtgcc actcagaggc cagcctgcag cggcaacaat gcgacacctc ccacaagact    1560
ccctttgtca gcccccttgct tgcctcccag agcctgtcca tcggcaacca ggtagggtcc    1620
ccagaatcag gccgctttta cgggctggat ttgtacggtg ggctccacat g            1671
```

```
        <210> 694
        <211> 898
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(898)
        <223> n = a,t,c or g



        <400> 694
tttttttttt ttgtgacagt ttctccactt tattagcctg gagctcctcc ctgccagccc     60
caggggctgg tcgctggtcc ctgggcacag tgagcagggc tgaggtcaga cgggttcggc    120
ccttggccat ggcagcttgg ttgggacagc cgggccaagg gaaaaaaagg tgcaaaagtc    180
caaatgctgg cacttcaggt gtggccggca cccagccagg cgcagtgggt gggcagggcg    240
ccatgcttct ctcctggcga caggtcggcc gtgtagcagc ccccctccc agcagccact     300
aggaacagct ggtgattctc gccaggaact gctgcgccca ccactcgtct aggtcaatgg    360
ggcacaaagt tctgcagccg gggattgggg gtcctctcca cgtactcac aggccttggc     420
ccgccctcac cggctgggcc accatccagc tgctgttgca cctgctgcca ggcttcggac    480
acaaagcgga cattctcctc gtgggccact gtgtaggtct cctgggtccc ctcgaaggat    540
ggggacgtgg aggggg cccg ccggccattc acacgattga acacaagcct tggccctgga    600
ctgcaggaag ggaggagacg gacatggttg gtgcccatcc caggtgcggt gctgcctggc    660
agaactcagg agcagccccg ggccagccca ctttccccag acttggccag cctaggcact    720
tcctgaacca gagagagcag ccacccacag cagccggtgg cccaggcctc tcttgcagtc    780
cccaagccat cggcagctca gctcacacct gcagccctgt gtcctgaggg aagtgagtga    840
ctgtagggg g ganatgcncc gcctagaggt tcgatcggtg gaaagacagc cgggccccc    898
```

```
        <210> 695
        <211> 630
        <212> DNA
        <213> Homo sapiens



        <400> 695
caaccccgcc gccggggaca tgtccaaccc ctgaagccgg aggaacgggc cagtcagact     60
gcgcccgaca ggtatattga aaagtctgat tcagttacaa tcagtgtatg gaatcacaag    120
aagatccata agaaacaagg tgctggattt ctccgttgtg ttcgtctttt tccagtgcca    180
```

```
tcaaccacct caaagacact ggttatcaga ggttggattt atgcaaactt gggccaaagg    240
acagttagaa gacagtagct gaagaagcat ctgtagggaa tccagaagga gcattcatga    300
agatgttaca agcccggaag cagcacatga gcactgagct gactattgag tcggaggcgc    360
cctcagacag cagtggcatc aacttgtcag gctttgggag tgagcagcta gacaccaatg    420
acgagagtga tgttagcagc gcactaagtt acatcttgcc ttatctctca ctgagaaatc    480
taggtgcaga atcaatattg ttaccgttca ctgaacagct attttcaaat gtacaagatg    540
gagataggct cctgagtatt ttgaaaaaca atagaaagag cccctcacag tccagccttc    600
taggtaacaa atttaaaaac aaaatatttg                                     630
```

```
<210> 696
<211> 879
<212> DNA
<213> Homo sapiens
```

```
<400> 696
tttcgtctga agcacagaca ccacttcccc aatctacagg agccatttta acagctaaaa    60
cttgtcggat tgcttttat tttcaagctc aaaagacgat agagaaagaa tacttgaagg    120
ccaagaagct tgagagaaga aaaatttcag aaaaattgtc tcaatttgac tagaatatca    180
atgaaccagg aaaactgaag caccttccct aaagaaaact tgggtataca attactccac    240
agacagagct gagggttttt tacccaaatc agtcactgga ttttgctgcc tgatacgtga    300
atcttcttgg aatttttctc atgtggatct aaggggaatg ctttattatg gctgctgttg    360
tccaacagaa cgacctagta tttgaatttg ctagtaacgt catggaggat gaacgacagc    420
ttggtgatcc agctattttt cctgccgtaa ttgtggaaca tgttcctggt gctgatattc    480
tcaatagtta tgccggtcta gcctgtgtgg aagagcccaa tgacatgatt actgagagtt    540
cactggatgt tgctgaagaa gaaatcatag acgatgatga tgatgacatc acccttacag    600
ttgaagcttc ttgtcatgac ggggatgaaa caattgaaac tattgaggct gctgaggcac    660
tcctcaatat ggattcccct ggccctatgc tggatgaaaa acgaataaat aataatatat    720
ttagttcacc tgaagatgac atggttgttg ccccagtcac ccatgtgtcc gtcacattag    780
atgggattcc tgaagtgatg gaaacacagc aggtgcaaga aaaatatgca gactcaccgg    840
gagcctcatc accagaacag cctaagagga aaaaaaaa                            879
```

```
<210> 697
<211> 719
<212> DNA
<213> Homo sapiens
```

```
<400> 697
ggcacgaggc gagcggagtt agcagggctt tactgcagag cgcgccgggc actccagcga    60
ccgtggggat cagcgtaggt gagctgtggc cttttgcgag gtgctgcagc catagctacg    120
tgcgttcgct acgaggattg agcgtctcca cccatcttct gtgcttcacc atctacataa    180
tgaatcccag tatgaagcag aaacaagaag aaatcaaaga gaatataaag actagttctg    240
tcccaagaag aactctgaag atgattcagc cttctgcatc tggatctctt gttggaagag    300
aaaatgagct gtccgcaggc ttgtccaaaa ggaaacatcg gaatgaccac ttaacatcta    360
caacttccag ccctgggggtt attgtcccag aatctagtga aaataaaaat cttggaggag    420
tcacccagga gtcatttgat cttatgatta aggtatgaa aaaatagata acttttgtct    480
taattttaaa ttatgatata aggaaaaatt tgttaatact attatgaatt ctgccaatta    540
ctgtaatctg gggatagtat aacagcacta taaatgtttt tgtatgtgac catttgtttg    600
acaagatcca tgtgtggatg aaatgttagg aaaagggagg cccagtggaa gtgggctcac    660
```

acctgtaatc ccagtaggct agggaggttg aagcaagagg atggcttgag tctagaagt   719

<210> 698
<211> 420
<212> DNA
<213> Homo sapiens

<400> 698
acatttcgtg ttaatggcgg gcagtagccg ctgagggat tgcagataac cgcttcccgc   60
acggggaaag tctaccctgc ctgccacttt ctgctcgccg tcagcgccgg agctcgccag   120
catgtctgtg gtaccgccca atcgctcgca gaccggctgg ccccgggggg tcactcagtt   180
cggcaacaag tacatccagc agacgaagcc cctcaccctg gagcgcacca tcaacctgta   240
agtgcggcgc ggccttggcg ggcatttctc tcgtgaaagc tcctatagac tctccgacgc   300
gcccccggct tttcggcgcg cttcacgcct ctgcacctcc ccgcctccaa ctcccgctgg   360
cggatgcgcg ccttcctccc tctctcaggc cctttctca tcctccagcc tccaggattc   420

<210> 699
<211> 422
<212> DNA
<213> Homo sapiens

<400> 699
gcggaaggag aagatgtgcc gccgctgcca acgtcgagcg gcgacggctg ggaaaaagat   60
cttgaagaag ctctggaagc aggaggttgt gatcttgaaa cgttgagaaa tataattcaa   120
ggaagaccgc tgcctgctga tctgagggcc aaagtttgga agattgctct gaatgttgca   180
ggaaaaggtg atagtttggc atcatgggat ggtatttag acttgccaga acagaacact   240
attcacaaag attgcctgca gtttattgac cagctttcag .tgccagagga gaaggcagca   300
gaattacttt tggatattga atctgtaatt acctttatt gtaaatcacg taacattaaa   360
tatagcacat cccttagctg gatacatcta ctgaaaccat tggtgcatct tcaactgcca   420
cg   422

<210> 700
<211> 412
<212> DNA
<213> Homo sapiens

<400> 700
cagatcactc ccaaatatag ccctctccag aaaccacttg gatagaaaaa agtccaaaga   60
gaactgaggt gtccaacaca tgagtgaggc cttcctggat ctctagctct cgtcaagcct   120
tcccaacacc acgaggaaca aaatgagcc atccaaatga gctttacccca aattcctgac   180

388

```
ccacggtgtc aagagcaatg aaagggttgt cgtttggctc tttccgccat cttttcgtgc   240
cgccacaatg gtgcacatga atgtcctgcc tgatgctctc aagagcatca acaatgccga   300
aagaagaggc aaaccccagg ttcttattag gctgtgctcc aaaatcatca tctggtttct   360
cactgtaatg gtgaagtatg gttacattgg caaatttgaa cccacgcgtc cg            412
```


```
<210> 701
<211> 977
<212> DNA
<213> Homo sapiens
```


```
<400> 701
agcggccgct tgccggcgtt ctggctcctg tggcctcacc aggaagcgtc agagtcccga   60
cactggggaa gctcggagcg ccgcctccgc tgccgccgcc tcctgcctgg ctctgggtcc   120
ccgagccccc tcccctggcc cagcccgact ccctcctcct tcccgaacca tccggctcgg   180
gctccttccc tggcgatggc tggccgctga gccatggctc agtacggcca ccccagtccg   240
ctcggcatgg ctgcgagaga ggagctgtac agcaaagtca ccccccggag gaaccgccaa   300
cagcgccccg gcaccatcaa gcatggatcg gcgctggacg tgctcctctc catggggttc   360
cccagagccc gcgcacaaaa agccttggca tccacgggag gaagaagtgt tcaggcagca   420
tgtgactggt tattctccca tgtcggtgac cccttcctgg atgacccct gccccgggag   480
tacgtcctct acctccgtcc caccggcccc ttagcacaga agctttccga cttttggcag   540
cagtcgaagc agatctgcgg gaagaacaag gcacacaaca tcttcccccca catcacactc   600
tgccagttct ttatgtgcga ggacagcaag gtggatgccc tgggggaagc cctgcagacc   660
acggtcagtc gctggaaatg taagttctcg gccccgctgc ccctggagct ctatacgtcg   720
tccaacttca tcggcctctt tgtaaaggaa gacagtgcgg aggtcctcaa gaagtttgct   780
gctgactttg ctgcagaggc tgcatccaaa accgaagtgc atgtggaacc tcataagaag   840
cagctacatg tgaccctggc ttaccacttc caagccagcc acctacccac cctagagaaa   900
ctggcccaga acattgacgt caagctaggg tgtgactggg tggctaccat attttctcgg   960
gatatccgat ttgctac                                                   977
```


```
<210> 702
<211> 406
<212> DNA
<213> Homo sapiens
```


```
<400> 702
ggcagacgag gccggcttct ccgcggacag ctaggagag tgtcctgggt gtcagccaga   60
acatgtcttt caacctgcaa tcatcaaaga aactgttcat tttcttagga aaatcactgt   120
ttagtcttct ggaggctatg attttttgcct tactcccaaa gccacggaag aacgttgctg   180
gtgaaatagt cctcatcaca ggtgctggaa gtggactcgg aaggctctta gccttgcagt   240
ttgcccggct gggatctgtt cttgttctct gggatatcaa taaggagggg aatgaggaaa   300
catgtaagat ggctcgggaa gctggagcca caagagtgca cgcctatacc tgcgattgca   360
gccaaaagga aggagtgtat agagtagccg accaggttaa aaaaga                   406
```


```
<210> 703
```

```
        <211> 987
        <212> DNA
        <213> Homo sapiens




        <400> 703
tttttttttt ttgtgtttat aacaggtttt acttttttc ttaaaatggg gatgttctta        60
ctaaatacca ttttatttca tttcttcaca gatcttctgg ttcttgatca tctataatta      120
tcaagtgtcg tatatagggga acaagtattg atgttcaata tgattcaaac tattactgtt      180
ccatagtcag tggagctttt tcaatgtcca gaaagaatac tttcaatctt tatgaacagc      240
ctaggatttt gcagttgttt ctgaaggctc aaattgtcct gcttcaaatt tttctttgaa      300
ttttaagtag tctcttcttt tatcaaaata ttttatccac tgttggggac aacttgattc      360
gaaagagctt cttaacttct tgcattgaga agcatcctct aagttctcat ctaaacactt      420
ccagtactca tcccgggccc cccagcagac ctgtctttcc ttcatagatg gggctgccat      480
tcctactgcg atgaagctct ctgcccgccc acgtccggct tcctttcgat gtcgacggga      540
ggaaactgtc acgcaggcca ccaaccggcg gtggagggcg cggtgccgag tcctgccact      600
gcagggtcgc cccgctggct caagctctag aagcgtagac ctccccagcc gcaaaaagca      660
agtcacgcgg cgaaaccgcg gactcttttg acccttccga gctaccattt actttccata      720
gaggggcggg acttcctgtt tcgcttttat cttgtctcgc tcttccgccc agtctcgagt      780
gcagtggtga gaacacggct tactgcagcc tcaaaatcct ggacccaaaa gatcctccca      840
cctcagcctg cctcccaggt agctgggact acaggcgcac aacaccatcg cttcttggat      900
taaaagaaaa ggatgaaacg ggccccagaa agaggcggtg acgtcccaga acccatggca      960
ggggagttgg gaaaataaat atttgta                                          987




        <210> 704
        <211> 473
        <212> DNA
        <213> Homo sapiens




        <400> 704
cacctgcacc ggctgcgagg agcagggagc tcctcaaaga gctcaggaac ggacaggaca        60
tggacacagt ggtctttgaa gacgtggttg tggatttcac gctggaggag tgggccttgc      120
tgaatcctgc tcagagaaaa ctctacagag atgtcatgct ggagaccttc aagcacctgg      180
cctcagtaga taatgaggct cagcttaaag ccagtgggtc tatttctcag caggatactt      240
ctggagaaaa attatccctc aaacagaaaa tagaaaagtt cacaagaaag aatatatggg      300
cctccctttt aggaaaaaat tgggaagaac atagcgttaa agacaagcac aacaccaagg      360
agagacattt gagcagaaat ccaagggtgg agagaccatg taaaagcagt aaaggtaata      420
aacgtggaag aaccttcaga aagactcgaa attgtaatcg tcatctgcgc agg            473




        <210> 705
        <211> 435
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(435)
        <223> n = a,t,c or g
```

390

<400> 705
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tttttttttt caattatttta taaaacttta atgagggaga ggccctaact cttcctcagc      60
tctaccaact actgaaagga aaagctggtg ctggggagcc ctccacacca ctgactgatg     120
aatttcagca cgtcctggca cactgggctg tgggaggtct gtgagcaaat ggaagaacat     180
gagaggaact tgttaatgct ggaaatacaa aatcagctcc atcgcaggct tcagggtctg     240
catctgcctt cctgtaatcc cacccatctt tntagtgtgt atgtgggttt tttgtttgtt     300
ttgagacaaa gtcttgcttt gtcgcccagg ctggagtgca gtggcacaat ctcagctcac     360
tgcaagctct gcctcccggg ttcaagcaat tctcctgcct cagcctcctc agtagctggc     420
attataggcg cgtgc                                                      435
```

<210> 706
<211> 894
<212> DNA
<213> Homo sapiens

<400> 706
```
cggcacgagg ttgaggcggc ggcgcgaggc agtatggttt gaagtggtga acatggattt      60
ttctcggctt cacatgtaca gtcctcccca gtgtgtgccg gagaacacgg gctacacgta     120
tgcgctcagt tccagctatt cttcagatgc tctggatttt gagacggagc acaaattgga     180
ccctgtattt gattctccac ggatgtcccg ccgtagtttg cgcctggcca cgacagcatg     240
caccctgggg gatggtgagg ctgtgggtgc cgacagcggc accagcagcg ctgtctccct     300
gaagaaccga gcggccaggt gagcaccgct gcacttcctc tccatctgat ctctaacacc     360
agttaaaacc aagcttccat actttttggt ctgtaaagcc gcaccctgtc tcgagcttaa     420
ggatatgtgt gtgtatgtgc gtgtacagac acacaaacct gccatataaa gtggtagttt     480
gctgcaaata aagactgaaa ggaactctgg aatctgtgtg gcttgtctag tattgatgtt     540
ctgctgttct tgtttcaagt tctcttcgct ggtgcacgcc acgtgcagtg ccagcactca     600
ggtctggaag ctttgtggtc ctgtggtggg agctcagcta cagctgtcct accacatgtg     660
taaagaggaa ggaatcttac agattacaca tgctgtcgtg gacgatctcc gtgtccagtt     720
cattcttttt tctggagacg gagtctcgct cttgtcgccc agggtggaat gcagtggcac     780
gatctcagct cactgcctcc tctgtctccc gggttcaagc gattctactg cacgcagcct     840
cctgagtagc tgggattaca ggcgcccgcc accacgcctg ggcaacagag tgag           894
```

<210> 707
<211> 410
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(410)
<223> n = a,t,c or g

<400> 707
```
tttctgcagg actgtaaact ggattcctgg aacctttgat attcctggct gtgtatagtg      60
```

```
cctgttggtg gactgtactg atactcaact agagtgtgaa gggactggat tcctgcccct      120
gagacacaat gcaagctgta gtgcccttga acaagatgac agccatctca ccagaacctc      180
aaactctggc ctcgactgaa caaaatgagg tcccaagagt ggttacttct ggggaacaag      240
aagctatttt aagaggaaat gctgctgatg cagagtcttt cagacagagg tttaggtggt      300
tttgttactc agaagtagct ggacccagga aagctctgag tcaactctgg gagctctgca      360
atcagtggct gagaccagac attcacacga aagaancaga ttttagagct                 410
```

```
        <210> 708
        <211> 650
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 708
gccgatttgc ctgttctcac gccccaccct cagacctagc cggagcaaag tttcacttat       60
agaagggaga ggagcgaaca tggcagcgcg ttggcggttt tggtgtgtct ctgtgaccat      120
ggtggtggcg ctgctcatcg tttgcgacgt tccctcagcc tctgcccaaa gaaagaagga      180
gatggtgtta tctgaaaagg ttagtcagct gatggaatgg actaacaaaa gacctgtaat      240
aagaatgaat ggagacaagt tccgtcgcct tgtgaaagcc ccaccgagaa attactccgt      300
tatcgtcatg ttcactgctc tccaactgca tagacagtgt gtcgtttgca agtatgaact      360
ccaactacgc tttaaaatta aataactcat ataacgttaa ccatttctca atcccagaag      420
ggccaagtta gtgcagtagg tacttaaata atgtgtatac cttactcagg atgtctatgg      480
tagcaatact actgctcttt tatagtcaat tcttgattat ccgtatcagt gggggaagca      540
tggataaata attgtggtag ccatcataaa agtaacttaa agatcaaaca gtcatcttat      600
aaattagtat caacttggcg gggcatgggg gctcatgcct gtaatccccg                 650
```

```
        <210> 709
        <211> 534
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 709
tttcgtggcg aacgaggccc cacctctgcc gggagcggga cgagcgcgca ggcgcagtct       60
ccccaggttg tagacgctgc ggcccggccc ggcgggtaaa taacagatgc gggtgaaaga      120
tccaactaaa gctttacctg agaaagccaa aagaagtaaa aggcctactg tacctcatga      180
tgaagactct tcagatgata ttgctgtagg tttaacttgc caacatgtaa gtcatgctat      240
cagcgtgaat catgtaaaga gagcaatagc tgagaatctg tggtcagttt gctcagaatg      300
tttaaaagaa agaagattct atgatgggca gctagtactt acttctgata tttggttgtg      360
cctcaagtgt ggcttccagg gatgtggtaa aaactcagaa agccaacatt cattgaagca      420
ctttaagagt tccagaacag agccccattg tattataatt aatctgagca catggattat      480
atggtggtat gaatgggatg aaaaaatttt cacccctttg aataaaaaag gttg            534
```

```
        <210> 710
        <211> 478
        <212> DNA
```

<213> Homo sapiens

<400> 710
gattgagacc ctattcgaga ccatagtcca tgtggtggaa ttctgatgtc tcaactccgg   60
cctctaggaa cttgaatgag gacaggaggg tcagagggag agcctaggag gctgagccaa   120
ggagcgtgga gaggagagac agggtgaagg tggcggctgg ctttctggaa gcaggtggcc   180
tttggtgcgg tcagcattcg tgccagcccc ctcttctctg atcctctcca tgtgtctctc   240
tcctggaatc ccagaagctg cccctgactc cccattaact gcctctgccc ctacccccta   300
ggtgatgctt ctgggagaca caggcgtcgg caaaacatgt ttcctgatcc aattcaaaga   360
cggggccttc ctgtccggaa ccttcatagc caccgtcggc atagacttca gggtgaggtg   420
gctgcaggca cttgcttcca gcagagagcc agggctgtgg ctcaggcatg gggggggtt   478

<210> 711
<211> 585
<212> DNA
<213> Homo sapiens

<400> 711
cttctacccc cggagctcag ctgatcttcc cttccagact acgaggtgtg aatttcaaac   60
ttccgtaatg gagttagccc acagtttatt gctaaatgaa gaagctttgg ctcaaatcac   120
cgaagcaaaa agaccagttt tcatctttga atggttgcga tttcttgata aagtcttggt   180
tgctgccaac aaggtatggt attgctcttt tttcccagtt gcattaacgt gaagagatta   240
tgtggtcatg attcttaaga aaacacatgt tatgttttgg aaggtttatg ggtcacttat   300
ggaacttgag agtattacac gaatgggaaa tttagtggca aaactcaaac ctcgtttaaa   360
tccagctcat tgcctatctt ctttatgttt gtacctgggc agctcattgt aactggagaa   420
aaacatggct atatgactgg tgtcacttta aatttatcat cgtcacccgt tgcaagtgat   480
ctctctatgc tgcctaacaa tcccagtgtc ttcacttatc tctttgagga gtcaataata   540
ggctcttttt tttttaatct gttttttctt cctgcatagc cttgt   585

<210> 712
<211> 391
<212> DNA
<213> Homo sapiens

<400> 712
acaaacagag aactggtttt gacagtgttt ctagagtgct ttttattatt ttcctgacag   60
ttgcgttcca ccatgattac tttctccttc agcgaatagg ctaaatgaat atgaaacaga   120
aaagcgtgta tcagcaaacc aaagcacttc tgtgcaagaa ttttcttaag aaatggagga   180
tgaaaagaga gagcttattg gaatgggggcc tctcaatact tctaggactg tgtattgctc   240
tgttttccag ttccatgaga aatgtccagt ttcctggaat ggctcctcag aatctgggaa   300
gggtagataa atttaatagc tcttctttaa tggttgtgta tacaccaata tctaatttaa   360
cccagcagat aatgaataaa acagcacttg c   391

```
<210> 713
<211> 524
<212> DNA
<213> Homo sapiens


<400> 713
atccccacag ggtaatgggt gtcccgatgt cacggggggac tctgtgatcc gtgttccct      60
gaccctccta gtgcacaact tggccgggct cactgggctc ctgcaccact gcctgtcagg     120
tccgctgcca gccccaagcc ccccaccagc catgagctcc tccagaaagg accacctcgg     180
cgccagcagc tcagagcccc tcccggtcat cattgtgggt aacggcccct ctggtatctg     240
cctgtcctac. ctgctctccg gctacacacc ctacacgaag ccagatgcca tccacccaca     300
cccctgctg cagaggaagc tcaccgaggc cccggggggtc tccatcctgg accaggacct      360
ggactacctg tccgaaggcc tcgaaggccg atcccaaagc cccgtggccc tgctctttga     420
tgcccttcta cgcccagaca cagactttgg gggaaacatg aagtcggtcc tcacctggaa     480
gcaccggaag gagcacgcca tcccccacgt ggttctgggc cgga                       524




<210> 714
<211> 2468
<212> DNA
<213> Homo sapiens



<400> 714
gaatcgacgc acgcgtgcgc agcgctgcca gcgtggaagg agctgcgggg cgcgggagga       60
ggaagtagag cccgggaccg ccaggccacc accggccgcc tcagccatgg acgcgtccct      120
ggagaagata gcagacccca cgttagctga aatgggaaaa aacttgaagg aggcagtgaa      180
gatgctggag gacagtcaga gaagaacaga agaggaaaat ggaaagaagc tcatatccgg      240
agatattcca ggcccactcc agggcagtgg gcaagatatg gtgagcatcc tccagttagt      300
tcagaatctc atgcatggag atgaagatga ggagccccag agccccagaa tccaaaatat      360
tggagaacaa ggtcatatgg ctttgttggg acatagtctg ggagcttata tttcaactct      420
ggacaaagag aagctgagaa aacttacaac taggatactt tcagatacca ccttatggct      480
atgcagaatt ttcagatatg aaaatgggtg tgcttatttc cacgaagagg aaagagaagg      540
acttgcaaag atatgtaggc ttgccattca ttctcgatat gaagacttcg tagtggatgg      600
cttcaatgtg ttatataaca gaagcctgt catatatctt agtgctgctg ctagacctgg      660
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ctgtaacact gtgtttggat cccagcatca gatggatgtt gccttcctgg agaaactgat      780
taaagatgat atagagcgag gaagactgcc cctgttgctt gtcgcaaatg caggaacggc      840
agcagtagga cacacagaca agattgggag attgaaagaa ctctgtgagc agtatggcat      900
atggcttcat gtggaggggtg tgaatctggc aacattggct ctgggttatg tctcctcatc      960
agtgctggct gcagccaaat gtgatagcat gacgatgact cctggcccgt ggctgggttt     1020
gccagctgtt cctgcggtga cactgtataa acacgatgac cctgccttga ctttagttgc     1080
tggtcttaca tcaaataagc ccacagacaa actccgtgcc ctgcctctgt ggttatcttt     1140
acaatacttg ggacttgatg ggtttgtgga gaggatcaag catgcctgtc aactgagtca     1200
acggttgcag gaaagtttga agaaagtgaa ttacatcaaa atcttggtgg aagatgagct     1260
cagctcccca gtggtggtgt tcagattttt ccaggaatta ccaggctcag atccggtgtt     1320
taaagccgtc ccagtgccca acatgacacc ttcaggagtc ggccgggaga ggcactcgtg     1380
tgacgcgctg aatcgctggc tgggagaaca gctgaagcag ctggtgcctg caagcggcct     1440
cacagtcatg gatctggaag ctgagggcac gtgtttgcgg ttcagccctt tgatgaccgc     1500
agcaggtaaa ccaggcttgg tggacatccc ttgctttgt tctggggctg ctgggtagat     1560
tagcttgccc ttatgatact ccattctcct agagttatta gcagctcttt ttggagggggc     1620
```

```
attttcttt  cttttgggct  aaatttaggt  agattagcat  tcccatgtaa  cttaccagaa  1680
tcagaatgag  aattcagaag  tcacctgaat  tggccgggca  tggtggctca  cacctgtaat  1740
cccagcacct  tgggaggcca  aggcaggcag  atcatctgag  gtcaggagtt  cgagaccagc  1800
ctggccaaca  tagtgaaatc  ccgcccctac  taaaaataca  aaaaattagc  caggcaccct  1860
gtccacagcc  cccacacaga  ctcgaggggc  ccccatctcc  tgttctgaac  ccaacagggt  1920
ggtcccactg  tgggaccaca  accaggtatg  actgtgtgag  aagcaggctc  actaccaggc  1980
taccagggag  cacaggggag  caggcgccac  cttgaggcat  aaacccagag  aaacaagacc  2040
tccaagacgg  ccaggcactg  gggcacacgc  cggtaacaca  gcaccgtggg  agctgagacg  2100
gaaggatcgc  ctgagcccag  gattttgaaa  ccaccctggg  caacacagtg  agaccccgta  2160
tctacaaaaa  aatacacatt  agccaggcat  ggcggcatgc  gcctggggtc  ccaagtactc  2220
gggaggtaga  ggagagaaaa  atcacttgag  cccagagagg  tcaaggctac  agggagctga  2280
gatcgcatca  ctgtactcca  gctggggtga  aacggcgaga  ctctacctca  aaaataaata  2340
aatacataca  taattaataa  ataaaacatc  aaagaccagc  cgacctaact  ccatctaaaa  2400
tacacaactt  ctacgcaaaa  tataaataaa  attagaaaac  aaactacaat  ctcagaaaag  2460
cactagca .                                                            2468
```

```
      <210> 715
      <211> 924
      <212> DNA
      <213> Homo sapiens

      <220>
      <221> misc_feature
      <222> (1)...(924)
      <223> n = a,t,c or g
```

```
      <400> 715
tttcgtgtaa  gatataactc  aactttgaaa  atgtcagccg  ttatagttga  agaaatctga   60
cccaagagac  ttcgctccgc  tgcaagatgg  aaggaagctt  aagtaagaca  taaatttgta  120
atgaacttgc  tcacaacatc  cgccgccact  gtgacttgca  gtcatcatcc  attaccacaa  180
aattagttgc  aggatggcta  ctcgtatccc  tccacacatg  atcatcagta  tttgcctcct  240
gtgtcccaac  cggcctgagt  caaggttacg  actcactgat  taaaaagagg  gacttttca   300
aatactttgc  acttttgatt  gtgtattatg  gataccaagg  aagagaagaa  ggaacggaaa  360
caaagttatt  ttgctcgact  gaaaaagaaa  aaacaagcca  aacaaatgc   agagacagcc  420
tcagctgtag  ctacaaggac  tcatactggg  aaggaagata  ataatacagt  agttttagag  480
ccagacaagt  gcaacattgc  tgtggaagag  gaatatatga  ctgatgagaa  aaaaaagaga  540
aaaagtaatc  agttaaagga  gatcaggcgt  acagaactaa  agagatatta  tagtattgat  600
gacaatcaaa  acaaaacaca  tgataaaaaa  gagaagaaga  tggtggttca  gaagccccat  660
gggactatgg  aatacactgc  tggaaaccag  gacaccctaa  actccatagc  actgaaattt  720
aacatcactc  ccaataaatt  ggtggaactg  aataaacttt  tcacacatac  tattgttcca  780
ggccaggtcc  tttttgtgcc  agatgccaac  tctccttcca  gtaccttaag  gctatcatca  840
tccagtcctg  gtgctactgt  ctctccttca  tcatnagatg  cagaatatgn  taattggctg  900
atgctgactt  agcacggaag  gctt                                           924
```

```
      <210> 716
      <211> 679
      <212> DNA
      <213> Homo sapiens
```

<400> 716
```
tttcgtgctg  tggcgcgcgg  ccggcagagg  gaggggagag  gccactgggg  ccgtgttagt    60
ctgccggtgg  ggactcttgc  agggccgtcc  ccatgttgcg  ttttccgacc  tgtttcccat   120
ccttccgggt  ggtgggagag  aagcagctcc  cgcaggagat  tattttcctg  gtctggtcgc   180
ccaagcggga  tctcattgct  ttggccaaca  cagctggcga  ggttttactt  catcgactgg   240
caagttttca  tcgagtttgg  agttttccac  caaatgaaaa  tacaggaaag  gaggtgacgt   300
gtctggcatg  gagaccagat  ggcaaacttt  tggcctttgc  tcttgctgat  accaagaaaa   360
ttgtttttgtg tgatgtagaa  aaacctgaga  gcttacactc  ttttttctgtg gaggctccag  420
tttcctgtat  gcattggatg  gaagtgacag  tagaaagcag  tgttctcaca  tcattttata   480
atgctgagga  tgaatcaaat  cttctcttac  ctaaactacc  tacactgcca  aaaaactata   540
gcaacacctc  aaaaatattt  agtgaagaaa  attctgatga  aattattaag  ctcttgggag   600
acgtcaggct  taatattctc  gtccttggag  gaagctctgg  atttattgag  ctttatgctt   660
atggaatgtt  taaaattgc                                                    679
```

<210> 717
<211> 821
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(821)
<223> n = a,t,c or g

<400> 717
```
ctttcatact  gcctcctccc  ttgttttttct gtctcagaga  gatagtctgt  cctaaatatc    60
ccatgtagcc  caggccactg  aattaaaacg  gagcgtattc  gttctctgcc  ccaccccgca   120
actcctgaaa  gcggcgcaac  tcaattactt  gatccttata  tgccccacgc  gggactcata   180
ctacgtttcc  cgtgaacacg  tgcagtccaa  accccgcccc  tgatatttat  ctcagtggac   240
ggtggccgga  aaaggacaat  ggtttccatg  tcagcggata  aacgctctcc  cctcggctcc   300
cggacgcgac  ggaggtcgta  gtagtagtga  gtacgtgctg  aggagcaaag  gagtaaccaa   360
gagatccagt  gaccgacaga  gcaagagcca  tgccgcgccg  gggcctggtg  gctgggccag   420
acttggagta  ttttcagcgt  cactatttca  cgccggcgga  ggtggcccaa  cataacaggc   480
ccgaagacct  ctgggtatct  tacctgggac  gcgtgtacga  cctaacgtca  ttggcacagg   540
aatacaaggg  gaacctgctg  ctgaaaccca  tcgtggaagt  tgcaggccag  gatatcagcc   600
actggtttga  tccaaagacc  agagacgtga  gttatgctgg  aacctgggat  tgtgggtaga   660
ggaaatggag  agcggggatg  ggaaggaaag  gcggaggcta  gccagagcct  aatggctgct   720
ctgacaccct  cgccccaaac  cctcctttaa  agatccgcaa  gcacgaattc  caccacatgg   780
nataagggtc  gtcaatgnnn  nnnnaagggg  natcaanccc  c                        821
```

<210> 718
<211> 480
<212> DNA
<213> Homo sapiens

<400> 718
```
ccggattccg  ggtcgacgat  ttcgtgcggc  ttttgtgttg  ggcagcgcga  atgtggcgag    60
```

```
ctcggtgcgt ctccgctgct ccttcccctt atccctggga ggtccaagtg gtcccgcggc    120
agcttctgtt gctctgggac ctgcaggtcc cggaaggtcc ttagggagga ccccagacac    180
cggagactgg gaaatggatt cagtgtcatt tgaagatgtg gctgtggcct ttactcagga    240
ggagtgggct ttgctggatc cttctcaaaa gaatctctac agagatgtga tgcaagaaat    300
cttcaggaac ctggcttctg taggaaacaa atcagaagac cagaatatcc aagatgactt    360
caaaaatcct gggagaaatc taagcagtca tgtggtagag agactgtttg aaattaaaga    420
aggcagtcaa tatggagaaa ccttcagcca ggattcaaat ttgaatctga ataagatagt    480
```

```
        <210> 719
        <211> 467
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 719
cgtaatctct cagcctttct gtgtctcctt tcctccgcct cagtttgggg cgggtcgggg     60
gaatggctga ggagatggag tcgtcgctcg aggcaagctt ttcgtccagc ggggcagtgt    120
cagggcctc agggttttg cctcctgccc gctcccgcat cttcaagata atcgtgatcg    180
gcgactccaa tgtgggcaag acatgcctga cctaccgctt ctgcgctggc cgcttccccg    240
accgcaccga ggccacgata ggggtggatt tccgagaacg agcggtggag attgatgggg    300
agcgcatcaa gatccagcta tgggacacag caggacaaga acgattcaga aagagcatgg    360
ttcagcacta ctacagaaat gtacatgctg ttgtcttcgt gtatgatatg accaacatgg    420
ctagttttca tagcctacca tcttggatag aagaatgcaa acaacat                  467
```

```
        <210> 720
        <211> 490
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 720
tggcaccgat ccgagattcc cggatcgacg atttcgtcgg agccccgagg ggccggagct     60
cctggcggtg ccggatcctg acggcggcct tcccccgggt cgattgtgat catggctgct    120
gagtctgatg ttctgcattt ccagtttgaa cagcaaggag atgtggtctt gcagaaaatg    180
aatcttttga dacagcagaa tttattttgt gatgtatcaa tttacattaa tgacactgag    240
ttccaggggc acaaggtgat tttggctgct tgctccactt ttatgagaga tcagtttta    300
ctcacacagt caaaacatgt cagaatcacc atcttacaga gtgcagaagt tggcagaaaa    360
ttgttactgt cttgctatac tggagcactt gaagttaaaa ggaaagagct tttgaaatac    420
ttgactgctg ccagttacct tcagatggtt cacattgcgg aaaagcgcac agaagctttt    480
gtcaagttct                                                           490
```

```
        <210> 721
        <211> 706
        <212> DNA
        <213> Homo sapiens
```

```
      <400> 721
agaggaggtt ggtgtggagc acaggcagca ccgagcctgc cccgtgagct gagggcctgc      60
agtctgcggc tggaatcagg atagacacca aggcaggacc cccagagatg ctgaagcctc     120
tttggaaagc agcagtggcc cccacatggc catgctccat gccgccccgc cgccgtgggg     180
acagacaggc tggcacgttg caggtcctgg gagcgctggc tgtgctgtgg ctgggctccg     240
tggctcttat ctgcctcctg tggcaagtgc cccgtcctcc cacctggggc caggtgcagc     300
ccaaggacgt gcccaggtcc tgggagcatg gctccagccc agcttgggag cccctggaag     360
cagaggccag gcagcagagg gactcctgcc agcttgtcct tgtggaaagc atcccccagg     420
acctgccatc tgcagccggc agccctctg cccagcctct gggccaggcc tggctgcagc     480
tgctggacac tgcccaggag agcgtccacg tggcttcata ctactggtcc ctcacagggc     540
ctgacatcgg ggtcaacgac tcgtcttccc agctgggaga ggctcttctg cagaagctgc     600
agcagctgct gggcaggaac atttccctgg ctgtggccac cagcagcccg acactggcca     660
ggacatccac cgacctgcag gttctggctg cccgaggtgc ccatgt                    706
```

```
      <210> 722
      <211> 677
      <212> DNA
      <213> Homo sapiens
```

```
      <400> 722
tttcgtaacg ccgcgtgctc ttcccaaggg gaggacgcgg gagaagccgg ggcctgagtg      60
ctccaaggcc ccgtgggctt cttgggtttg ttgcctccgg ccgctcatta actcaggatg     120
gcgtggaaga cctcgcccgc ctccccttct gggccgcggc tccgcttaag tgaaggcctg     180
tttgggcgtc cccaccctgg agaggggccg gggtctggat tttcagaact gccactcttc     240
tagtgcgctg gcgtcaatgc tcccttcctc gggccattgg agactccgtt gcttttttaat    300
ggcggcagcg gctgctgggt gagcagctgg aggccggaca gtgttcgtcc catccggaga     360
ggatcgcttt ctcctggcgt caccagcgct gggttggtgg gggtagcttt tccctctttg     420
ctcctccatt cttgaagaaa gaagaagatg ccactgccat ttgggttgaa actgaaacgc     480
acccggcgct acacggtgtc cagcaagagt tgcctggttg cccggatcca actgcttaat     540
aacgagtttg tggagttcac cctgtccgtg gagagcactg gccaggaaag cctcgaggcc     600
gtggcccaga ggctggagct gcgggaggtc acttacttca gcctctggta ctacaacaag     660
caaaatcagc gccggtg                                                     677
```

```
      <210> 723
      <211> 600
      <212> DNA
      <213> Homo sapiens
```

```
      <400> 723
tttcgtgttg agcaccttcg tcgccattgg ctttcctccc ccagctccag cctctctcat      60
cttgggaatc tgcgtcagaa gtcactcgca gtcccgtcag cccagaagac gtaaagcagg     120
ctaccagcaa ttttgagaac ttgcaaaaac agcttgcaag gaaaatgaag cttcctattt     180
tcatagcaga tgcattcaca gcaagagcat ttcgtgggaa tcctgctgct gtttgcctcc     240
tagaaaatga attggatgaa gacatgcatc agaaaattgc aagggagatg aacctctctg     300
```

```
aaactgcttt tatccgaaaa ctgcacccga cagacaactt tgcacaaagt tcctgctttg    360
gactgagatg gtttacacca gcgagtgagg tcccactctg tggccatgcc accctggctt    420
ctgcagctgt gctgtttcac aaaataaaaa acatgaatag cacgctcacg tttgtcactc    480
tgagtggaga actaagggcc agacgagcag aggacggcat cgtcctggac ttgcctcttt    540
atccagccca cccccaggac ttccatgaag tagaggactt gataaagact gccataggca    600
```

```
        <210> 724
        <211> 530
        <212> DNA
        <213> Homo sapiens




        <400> 724
tttcgttgcg cgttccggaa ctggtttccc ggaaggagta tgtctgcgcc ttcgatccga     60
ccggaagttg cacgctgagc cgcggacacc atgcagtcgg atgatgttat ctgggataca    120
ctaggaaaca agcaattttg ttccttcaaa ataagaacca agactcagag cttctgccga    180
aatgaatata gcctgactgg actgtgtaat cggtcatcct gtcccctggc aaatagtcag    240
tatgccacta ttaaagaaga gaaaggacag tgctacttgt atatgaaggt tatagaacga    300
gcggcttttc ctcggcgtct ctgggaacgg gtccggctta gtaaaaacta tgagaaagca    360
ctggagcaaa tagatgaaaa tctgatttac tggccccgtt tcattcgaca caaatgtaag    420
cagagattca ccaagatcac ccaatacctta attcgaatta gaaaacttac actaaagcga    480
cagaggaaac ttgttccttt gagtaagaag gtggagcgta gggagaaaag              530
```

```
        <210> 725
        <211> 428
        <212> DNA
        <213> Homo sapiens




        <400> 725
tttcgtagag cggggactcg gcgaccctgc cctcccgacc ctcatgttcg aagagcctga     60
gtgggccgag gcggccccag tagccgcggg ccttgggccc gtaatctcac gacctccgcc    120
tgcggcctcc tcgcaaaaca aggtgagtga ctcgcgggag caatgggagc tgtttcaggc    180
cgcgaagcgg acattggtgg atcccagcgc tgtgtgtatt gcggggaggg acacctgtgg    240
caccgttaag ggcgagtcct gatctgaaga tccgagaact tccaaaagaa actgacgttg    300
ggtcagagag agttgttgag taaaagttgg tgaagcgaag agggttcttc agacaggaaa    360
aagtacgtac aagggccctg ggacaagaga gcatgttctg tcagagtcac aaacacaagt    420
ggtccttt                                                            428
```

```
        <210> 726
        <211> 859
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
```

<222> (1)...(859)
<223> n = a,t,c or g

<400> 726
gtggtggaat tcctctggag caggaggccc agtggctctt ctgacccaag gccccgccgt   60
ccagcttcta agtgccagat gatggaggag cgtgccaacc tgatgcacat gatgaaactc   120
agcatcaagg tgttgctcca gtcggctctg agcctgggcc gcagcctgga tgcggaccat   180
gccccccttgc agcagttctt tgtagtgatg gagcactgcc tcaaacatgg gctgaaagtt   240
aagaagagtt ttattggcca aaataaatca ttctttggtc ctttggagct ggtggagaaa   300
ctttgtccag aagcatcaga tatagcgact agtgtcagaa atcttccaga attaaagaca   360
gctgtgggaa gaggccgagc gtggctttat cttgcactca tgcaaaagaa actggcagat   420
tatctgaaag tgcttataga caataaacat ctcttaagcg agttctatga gcctgaggct   480
ttaatgatgg aggaagaagg gatggtgatt gttggtctgc tggtgggact caatgttctc   540
gatgccaatc tctggcttga aaggagaaga cttggattct caggttggag taatagattt   600
ttccctctac cttaaggatg tgcaggatct tgatggtggc aaggagcatg aaagaattac   660
tgatgtcctt gatcaaaaaa attatgtgga agaacttaac cggcacttga gctgcacagt   720
tggggatctt caaaccaaga tagatggctt ggaaaagact aactcaaagc ttcaagaang   780
agtttcagct gcaacagacc gaatttgctc acttcaagaa gaacagcagc agttaagaga   840
acaaaatgaa ttaattcga   859

<210> 727
<211> 450
<212> DNA
<213> Homo sapiens

<400> 727
tttcgtcagt gtggggcctg gaccgctggg taggcgcgtc cagcggcctg agcagggggag   60
ggtaatgagg ctgttacgcg ccttctccgc atcttggcgg gagcctgacg ccccgcttct   120
tccctaacgg ggtgttccac cggcgcctgc cgaggcctag gcctccgcag ccgccctccg   180
tctcctcagc cccgacgctg cgcccgcttt gtgctcattt ttctctgggg aaactgaggc   240
tccgagtgcg aaagtcagcc gaggtcgccc cgcccaggac agagaagggc tgggggtcgg   300
ctgagccgcg gcattccgg gccccgctag ggctgcaggg tctcaggatg gcagcctcgg   360
cgcaggtgtc tgtgaccttt gaggatgtgg ctgtgacatt cacccaggag gagtggggac   420
agttggatgc agcccagaga accttgtatc   450

<210> 728
<211> 439
<212> DNA
<213> Homo sapiens

<400> 728
tttcgtgggt cgctttcctc accttcctcg ctgcgcgggc ggcggttggt aaccggtcag   60
accagcccga gagggacctg gtgcctgtac ccaggcttct gtcgctctgt cgcctgcgct   120
atgccctgct gtagtcacag gagctgtaga gaggaccccg gtacatctga aagccgggaa   180

```
atggacccag tggtctttga ggatgtggct gtgaacttca cccaggaaga gtggacattg   240
ctggatattt cccagaagaa tctcttcagg gaagtgatgc tggaaacttt caggaacctg   300
acctctatag gaaaaaaatg gagtgaccag aacattgaat atgagtacca aaaccccaga   360
agaagcttca ggagtctcat agaagagaaa gtcaatgaaa ttaaagaaga cagtcattgt   420
ggagaaactt ttacccagg                                                439
```

```
        <210> 729
        <211> 236
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 729
cggccgcgtc gaccgacgtt agtgagggac ccaatgtgag tccccggcca gctgaatcca   60
agccgtgtgt actgcgtggt cagcactgcc cgacagtcct agctaaactt cgccaactcc   120
gctgcctttg ccgtcaccat gccacagaat gaatatattg aattacaccg taaacgctat   180
ggattccgtt tggattacca tgagaaaaag agaaagaagc aaagtcgaga ggctca        236
```

```
        <210> 730
        <211> 807
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 730
tgggaacaca agttgacgct ttttgtgttc cttgagtcca gtcgggaagg gcccttgtga   60
ctgggtctca tgccaaacaa cttgttacaa taagagctag ggtcccagac catgcggaaa   120
cttcatgaga atcctctgta gtctggtgag tgtagtgtcc gactctggag cccaggctgt   180
tgcttcccgg tctggtggtg aatcctccat agtctggaga tctcagccct gctgagctga   240
tgatgctgac tataggagat gttattaaac aactgattga agcccacgag caggggaaag   300
acatcgatct aaataaggtg aaaaccaaga cagctgccaa atatggcctt tctgcccagc   360
cccgcctggt ggatatcatt gctgccgtcc ctcctcagta tcgcaaggtc ttgatgccca   420
agttaaaggc gaaacccatc agaactgcta gtgggattgc tgtcgtggct gtgatgtgca   480
aaccccacag atgtccacac atcagtttta caggaaatat atgtgtatac tgccctggtg   540
gacctgattc tgattttgag tattccaccc agtcttacac tggctatgag ccaàcctcca   600
tgagagctat ccgtgccaga tatgaccctt tcctacagac aagacaccga atagaacagt   660
taàaacaact tggtcatagt gtggataaag tggagtttat tgagatgggt ggaacgttta   720
tggcccttcc agaagaatac agagattatt ttattcgaaa tttacatgat gccttatcag   780
gacatacttc caacaatatt tacgagg                                       807
```

```
        <210> 731
        <211> 944
        <212> DNA
        <213> Homo sapiens
```

```
       <400> 731
tttcgtgtga ggggaggggc gcgtgctaaa ccagaagagg taaaccaatg cagtgagaga    60
gaggtggttg tgggctccac agcttctgat ttggaggaag ctgcgagacc gagagcctag   120
gagcaccttc cacgcccagg gctgtggtac aggttggtgg gggaggggcg ccacgcggtg   180
tttggcagga aggggaggcc tctctactga ccggaagctg cgctagaaaa agaaggagga   240
gactgcggcg cagcagcgac tagtgggagt ccgatgtggg agaggggctg cggccaccgc   300
caccgccgcc gccaccagga aggcggagga cgcaggagcc aagagcaagg gacgccgcca   360
cggtcatctt cgcctgcccc gccgccctct tagagacact cattgcctat ggatcatcct   420
ctcccagctt ttgcaagcac cgggctgctc gcccgctgat tttcctcctc cataggctca   480
ctgcggaggc aacggcgagg tgtccgattt gtgcacttga ggcccgcaat ccgggacggt   540
ggggaatctg cgcctcctgg ccgggcatga agaccccgtt tggaaaggca gctgcagggc   600
agcggtccag gacgggcgct ggccacggca gtgtgtctgt taccatgata aagaggaagg   660
ctgcacacaa gaagcatagg agccgaccca cctcccagcc tcgggggaac atcgtgggct   720
gcataattca gcacggatgg aaagatggag atgaacctct aacacagtgg aaaggaaccg   780
ttctggatca gctcctttga ataaacctgc ccaccaccaa gaacccatac atgactttct   840
tttcattgta tcaaacgaat gtgtccaccg gtgtgagcac cagcaactca cttcttcctc   900
agacatctct aaagctggac agaatatgag ggacaatatc gttt                    944
```

```
       <210> 732
       <211> 761
       <212> DNA
       <213> Homo sapiens
```

```
       <400> 732
ccgagacctc ggtgtggccc ttgaggcatt tcaatgggcg agggccggcg actgtggatc    60
tggagctgga cgcgctggag gggaaggagt tgatgcagga cggcgcgtcc ctgagcgaca   120
gcaccgagga cgaggaggag ggggcgagcc tgggcgacgg cagcggggcg gaaggcggca   180
gctgcagcag cagcaggcgg tcgggcggcg atggcgggga cgaagtggag ggcagcggtg   240
tgggagctgg cgaaggagag actgtccagc acttcccgct cgcgcggccc aagtctctaa   300
tgcagaagct ccaatgctcc ttccagacct cctggctcaa ggactttccc tggctgcgct   360
attccaagga tactggtctt atgtcttgcg gctggtgcca aaagacccct gcagatgggg   420
gaagcgtgga ccttccccca gtggggcatg atgagctttc gcgagggacc cgcaactaca   480
agaaaaccct cctcctgagg caccacgtct ctaccgagca caaactccac gaagccaacg   540
cccaggagtc agaaatacca tcagaggagg ggtactgtga ctttaatagt aggccaaatg   600
agaactctta ttgctatcaa cttctgcgac aactaaatga acagagaaag aaaggtattc   660
tttgtgatgt cagcattgtg gtaagcggaa aaatcttcaa agctcataag aacatcctgg   720
ttgcaggcag ccgtttcttt aagactttat attgcttttc a                       761
```

```
       <210> 733
       <211> 523
       <212> DNA
       <213> Homo sapiens
```

```
       <220>
       <221> misc_feature
       <222> (1)...(523)
       <223> n = a,t,c or g
```

```
<400> 733
aattcccggg tcgacgattt cgtgcgggag cagagatctg cgggcgnttg cagcttgcgg    60
tagggaggcg tggtggtctg aagcctccga gcagccgcgg ccatggcgga tgtaaccgcc   120
cgtagtctgc aatacgagta caaggcgaac tcgaatcttg tgctccaagc tgaccgttct   180
ctcattgacc ggacccgccg ggatgaaccc acaggagagg tgctgtccct tgttgggaag   240
ctggagggca cccgtatggg agacaaggct caacggacca aaccgcagat gcaggaggaa   300
agaagagcca agcgaagaaa gcgtgatgag gaccggcatg acatcaacaa gatgaagggt   360
tatactctgc tgtcggaggg cattgatgag atggtgggca tcatctacaa gcccaaaact   420
aaagagactc gggagaccta tgaggtgcta ctcagcttca tccaggctgc tcttggggac   480
cagccacgtg atatcctttg tggggcagct gatgaagttc tag                     523
```

```
<210> 734
<211> 1341
<212> DNA
<213> Homo sapiens
```

```
<400> 734
tttttttttt ttaaccagat tatttcactt attatttatt ttatcttcca atttcctctt    60
gccagactcc catccaaaga gtcataagca gccttcttcc caccttctta catgaaatac   120
atccccacct gaacaaaggc acacggacag gaggaagggg aataggactt cgcaaaactg   180
gacacggcat cgcttcagat cttggactct gaggttccgt tgttactggt ttcacagtta   240
caggcttcgg atggtctgca cgtgctgttt caagactaat ggtagtctct attgcttctg   300
ttatgtcctt atccaacctg ttcagcctgt cctctgactc aaatatggag taatcaatgg   360
tgaaatctgc actaaagtca tcataactgg gggtgactgt ataataatag accacctgat   420
aatattcatc ctctcccagt ctttcttcat cctcatattc ttgtcccagg ataagtggca   480
cagcaaagat ggctacaaag aggacatcca ttctggattc tgcactattg catcaccacc   540
cagagttgcc tttctctctg aggcttcatc agtctctttt cgtcacagtg gaaatgttct   600
gaggaagggg tgagcatttt tctagactga aaagaatccc tttcttctgt ctgtctggag   660
cagccatggg ggctgcggtg ttttttcggct gcactttcgt cgcgttcggc ccggccttcg   720
cgcttttctt gatcactgtg gctggggacc cgcttcgcgt tatcatcctg gtcgcagggt   780
gagtagaggg cccgggagac gcgggagagc gtcgaagaga gaggtgcgga aggggctgga   840
ggaactgggg caagcctggg agcctgaatt ggggacgata agtcggaggt gaagtttggg   900
cggaggtgag gggttgggtc tgggagattt gtcctttccc gcagttggtt ccaccttcc    960
aaggatctca cagattcctc ctatattcct cccagcgacg tcagagaagg cccaaggccg   1020
agactcgtga ggggctgtg ctgacctagg caggccgagt caggtgcctt aggggaggat   1080
ccaggaacgg atacctcgcc cttccgtgct cgcacactct ggctgtcatc gctctgaaga   1140
ctctttaatt agatttctcc cctttccagt gcgttcactt ttctacagat gagtctcctg   1200
gtggagacag ttaccctacc tggtccatgt ctccctaacc atccggaagg ctaacttcca   1260
cttttcaagc agctttggct ggtttccctc cttgatttct ctggctccca ctactattgc   1320
ttgtctcact gcccctgtat t                                              1341
```

```
<210> 735
<211> 703
<212> DNA
<213> Homo sapiens
```

```
        <400> 735
tttcgtgaga ggcccaggtg aggagcaagc gcccgcgttc cggaagcccg ctcccggggc    60
catggggggca caggtgaggc tgccgcccgg agagccctgc cgagaaggat atgtgctgtc   120
tctggtctgt ccaaactcct cccaggcttg gtgtgagatc acaaatgtgt cacagctgct   180
ggcttctcct gtgctctaca cggacctgaa ttacagcata aacaacttga gcatttcagc   240
aaatgtagaa aacaaataca gtctttatgt gggcttggta ctggcagtaa gctcaagtat   300
tttttattggc tccagcttca tactgaaaaa gaagggcctc ttgcaactgg ccagcaaggg   360
ctttactaga gctggacaag gtggacattc ttacctgaag gaatggctct ggtgggtagg   420
attgctgtca atactgtcct ggaatgcaag ggaaaaagtt gacctttgaa atattacatt   480
ttaaccacag acttcttgta ttttcttcac cataacaata gagaaaagta ctttttctttc   540
atattttccc acctcctaat ttgaacaact attgtagctg catattttct caagaaagag   600
tacagtttcc ttgccaggac aacacggata agtgaaaggc ttctgtggct gcttggtact   660
gaacaaatgg agaagaaatg aagggtgtca gcactctcct tcc                      703
```

```
        <210> 736
        <211> 401
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 736
tttcgtctgg cgtggacgtt tgtggtgggg cgtgttggtc cgcgctctca gaactgtgct    60
gggaaggatg gtagggcgac tggggctcac ctccgcaccg ttgtaggacc cggggtaggg   120
ttttgagccc gtgggagctg ccccacgcgg cctcgtcctg ccaacggtcg gatggcggag   180
acgaaggacg cagcgcagat gttggtgacc ttcaaggatg tggctgtgac ctttacccgg   240
gaggagtgga gacagctgga cctggcccag aggaccctgt accgagaggt gatgctggag   300
acctgtgggc ttctggtttc actagggcat cgggttccca aaccagagtt ggtccacctg   360
ctaaagcatg ggcaggagct gtggatagtg aagagaggcc t                       401
```

```
        <210> 737
        <211> 933
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 737
agcggccgct cgcccgtgtt gtgtgtcccc ggtgtcaccg agcgtgttgt gtgtccgtgc    60
ggcgcggcgc tcgtgtggct ccctcgcgcc caccacgctg gccccggggc ccggctcgc    120
ccttcccagg cgccggctgc agcagagttt cagaacaagc ttcctggaac ccatgaccca   180
tgaagtcttg tcgacattta taccgtctga gggtagcagc tcgaaagtag aagaaagtgt   240
tgccagggac ggcagtatct ctttgtgtga ccctggcggc ttatgggacg ttggcttcag   300
acctttgtga tacaccatgc tgcgtgggac gatgacggcg tggagaggaa tgaggcctga   360
ggtcacactg gcttgcctcc tcctagccac agcaggctgc tttgctgact tgaacgaggt   420
ccctcaggtc accgtccagc ctgcgtccac cgtccagaag cccggaggca ctgtgatctt   480
gggctgcgtg gtggaacctc caaggatgaa tgtaacctgg cgcctgaatg gaaaggagct   540
gaatggctcg gatgatgctc tgggtgtcct catcacccac gggaccctcg tcatcactgc   600
ccttaacaac cacactgtgg acggtacca gtgtgtggcc cggatgcctg cggggggctgt   660
ggccagcgtg ccagccactg tgacactagc cagtgagtct gctcctttgc ctccctgcca   720
tggtgcggtc cctcctcatc tctcccaccc tgaagccccc accattcatg ctgcctcttg   780
```

```
ttactcttag cataaaatgg gccttaactg cagaaatgtc aaatcagaac agtagctgcc    840
ttagtaatgc ccagtgatgg gggacccctt gtgcccttgg aaaacctcac tccaagtaga    900
ggctgtatct ggagtgagtg tctacagaga ggg                                933
```

```
         <210> 738
         <211> 420
         <212> DNA
         <213> Homo sapiens
```

```
         <400> 738
ctggggtcgg cggagacagc tggtgtctga agccgctcgc gcccagggtg accctgtttg     60
cagcacgatg tctgaagaag aggcggctca gatccccaga tccagtgtgt gggagcagga    120
ccagcagaac gtggtgcagc gtgtggtggc tctgcccctg gtcagggcca cgtgcaccgc    180
ggtctgcgat gtttacagtg cagccaagga caggcacccg ctgctgggct ccgcctgccg    240
cctggctgag aactgcgtgt gcggcctgac cacccgtgcc ctggaccacg cccagccgct    300
gctcgagcac ctgcagcccc agctggccac tatgaacagc ctcgcctgca ggggcctgga    360
caagctggaa gagaagcttc cctttctcca gcaaccttcg gagacggtgg tgacctcagc    420
```

```
         <210> 739
         <211> 1248
         <212> DNA
         <213> Homo sapiens
```

```
         <400> 739
tttcgtagcg agtaaagaag cagatttgct ctccctcccg cttcctccct cccatcttcc     60
cacccgggct gtgcccaggc cacagagcag ctgcaggcct tgggagagga cccacacagc    120
ctcctgtagg tggcaacagt gccacctgtt tgactcatag ggctgaaccg aggactgaaa    180
aagggaggag gcagaccact cggagaggag ctgggaagca gtgcagagag gagagcggag    240
cggagctgcc gctgagcaaa ggccttcacc atggccgagt cccccggctg ctgctccgtc    300
tgggcccgct gcctccactg cctgtatagc tgccactgga ggaaatgccc cagagagagg    360
atgcaaacca gcaagtgcga ctgtatctgg tttggcctgc tcttcctcac cttcctcctt    420
tccctgagct ggctgtacat cgggctcgtc cttctcaatg acctgcacaa cttcaatgaa    480
ttcctcttcc gccgctgggg acactggatg gactggtccc tggcattcct gctggtcatc    540
tctctactgg gcacatatgc atccttgcta ttggtcctgg ccctgctcct gcggctttgt    600
agacagcccc tgcatctgca cagcctccac aaggtgctgc tgctcctcat tatgctgctt    660
gtggcggctg gccttgtggg actggacatc caatggcagc aggagaggca tagcttgcgt    720
gtgtcactgc agactgcagg tagctctgaa ctccagcagt caggccctaa gaggaaagcg    780
gggaggggca ctggagaaga gcccacctca ccagctcttg tccacaggcc acagccccat    840
tccttcatat tggagcagcc gctggaattg ccctcctggc ctggcctgtg ctgatacct     900
tctaccgtat ccaccgaaga gagcccaaga ttctgctact gctcctattt tttggagttg    960
tcctggtcat ctacttggcc cccctatgca tctcctcacc ctgcatcatg gaacccagag   1020
acttaccacc caagcctggg ctggtgggac accgaggggc ccccatgctg gctcccgaga   1080
acaccctgat gtccttgcgg aagacagctg aatgcggagc tactgtgttt gagactgatg    1140
tgatggtcag ctccgatggg gtccccttcc tcatgcatga tgagcacctc agcaggacca   1200
cgaatgtagc ctctgtattc ccaacccgaa tcacagccca cagcagtg               1248
```

<210> 740
<211> 185
<212>Amino acid
<213> Homo sapiens

<400> 740

Phe	Val	Gly	Arg	Leu	Leu	Arg	Leu	Gly	Glu	Ala	Leu	Arg	Leu	Arg	Pro
1				5					10					15	
Asp	Pro	Ser	Gly	Gly	Cys	Arg	Leu	Gln	Pro	Ala	Leu	Val	Gly	Glu	Thr
			20					25					30		
Glu	Met	Ser	Glu	Lys	Glu	Asn	Asn	Phe	Pro	Pro	Leu	Pro	Lys	Phe	Ile
		35					40					45			
Pro	Val	Lys	Pro	Cys	Phe	Tyr	Gln	Asn	Phe	Ser	Asp	Glu	Ile	Pro	Val
	50				55					60					
Glu	His	Gln	Val	Leu	Val	Lys	Arg	Ile	Tyr	Arg	Leu	Trp	Met	Phe	Tyr
65				70					75						80
Cys	Ala	Thr	Leu	Gly	Val	Asn	Leu	Ile	Ala	Cys	Leu	Ala	Trp	Trp	Ile
			85					90					95		
Gly	Gly	Gly	Ser	Gly	Thr	Asn	Phe	Gly	Leu	Ala	Phe	Val	Trp	Leu	Leu
			100					105					110		
Leu	Phe	Thr	Pro	Cys	Gly	Tyr	Val	Cys	Trp	Phe	Arg	Pro	Val	Tyr	Lys
		115					120					125			
Ala	Phe	Arg	Ala	Asp	Ser	Ser	Phe	Asn	Phe	Met	Ala	Phe	Phe	Phe	Ile
	130				135					140					
Phe	Arg	Ser	Pro	Val	Cys	Pro	Asp	Arg	His	Pro	Gly	Asp	Trp	Leu	Leu
145				150					155						160
Arg	Leu	Gly	Arg	Val	Arg	Leu	Ala	Val	Gly	Asn	Trp	Ile	Leu	Pro	Val
			165					170					175		
Gln	Pro	Gly	Arg	Cys	Arg	Gly	His	Ala							
			180					185							

<210> 741
<211> 177
<212>Amino acid
<213> Homo sapiens

<400> 741

Phe	Leu	Gly	Ala	Gly	Ala	Asp	Ile	Phe	Cys	Ala	Tyr	Leu	Arg	Met	Ser
1				5					10					15	
Ser	Lys	Gln	Ala	Thr	Ser	Pro	Phe	Ala	Cys	Ala	Ala	Asp	Gly	Glu	Asp
			20					25					30		
Ala	Met	Thr	Gln	Asp	Leu	Thr	Ser	Arg	Glu	Lys	Glu	Glu	Gly	Ser	Asp
		35					40					45			
Gln	His	Val	Ala	Ser	His	Leu	Pro	Leu	His	Pro	Ile	Met	His	Asn	Lys
	50				55					60					
Pro	His	Ser	Glu	Glu	Leu	Pro	Thr	Leu	Val	Ser	Thr	Ile	Gln	Gln	Asp
65				70					75						80
Ala	Asp	Trp	Asp	Ser	Val	Leu	Ser	Ser	Gln	Gln	Arg	Met	Glu	Ser	Glu
			85					90					95		
Asn	Asn	Lys	Leu	Cys	Ser	Leu	Tyr	Ser	Phe	Arg	Asn	Thr	Ser	Thr	Ser
			100					105					110		
Pro	His	Lys	Pro	Asp	Glu	Gly	Ser	Arg	Asp	Arg	Glu	Ile	Met	Thr	Ser
		115					120					125			

```
Val Thr Phe Gly Thr Pro Glu Arg Arg Lys Gly Ser Leu Ala Asp Val
    130                 135                 140
Val Asp Thr Leu Lys Gln Lys Lys Leu Glu Glu Met Thr Arg Thr Glu
145                 150                 155                 160
Gln Glu Asp Ser Ser Cys Met Glu Lys Leu Leu Ser Lys Asp Trp Lys
                165                 170                 175
Glu
177
```

```
<210> 742
<211> 434
<212>Amino acid
<213> Homo sapiens
```

```
<400> 742
Glu Gly Tyr Leu Thr Gly Arg Pro Thr Arg Pro Val Ala Val Arg Gly
  1           5                  10                  15
Lys Ser Thr Ala Asp Leu Arg Met Met Gly Arg Ser Pro Gly Phe Ala
            20                  25                  30
Met Gln His Ile Val Gly Val Pro His Val Leu Val Arg Arg Gly Leu
        35                  40                  45
Leu Gly Arg Asp Leu Phe Met Thr Arg Thr Leu Cys Ser Pro Gly Pro
    50                  55                  60
Ser Gln Pro Gly Glu Lys Arg Pro Glu Glu Val Ala Leu Gly Leu His
65                  70                  75                  80
His Arg Leu Pro Ala Leu Gly Arg Ala Leu Gly His Ser Ile Gln Gln
                85                  90                  95
Arg Ala Thr Ser Thr Ala Lys Thr Trp Trp Asp Arg Tyr Glu Glu Phe
            100                 105                 110
Val Gly Leu Asn Glu Val Arg Glu Ala Gln Gly Lys Val Thr Glu Ala
        115                 120                 125
Glu Lys Val Phe Met Val Ala Arg Gly Leu Val Arg Glu Ala Arg Glu
    130                 135                 140
Asp Leu Glu Val His Gln Ala Lys Leu Lys Glu Val Arg Asp Arg Leu
145                 150                 155                 160
Asp Arg Val Ser Arg Glu Asp Ser Gln Tyr Leu Glu Leu Ala Thr Leu
                165                 170                 175
Glu His Arg Met Leu Gln Glu Glu Lys Arg Leu Arg Thr Ala Tyr Leu
            180                 185                 190
Arg Ala Glu Asp Ser Glu Arg Glu Lys Phe Ser Leu Phe Ser Ala Ala
            195                 200                 205
Val Arg Glu Ser His Glu Lys Glu Arg Thr Arg Ala Glu Arg Thr Lys
    210                 215                 220
Asn Trp Ser Leu Ile Gly Ser Val Leu Gly Ala Leu Ile Gly Val Ala
225                 230                 235                 240
Gly Ser Thr Tyr Val Asn Arg Val Arg Leu Gln Glu Leu Lys Ala Leu
            245                 250                 255
Leu Leu Glu Ala Gln Lys Gly Pro Val Ser Leu Gln Glu Ala Ile Arg
            260                 265                 270
Glu Gln Ala Ser Ser Tyr Ser Arg Gln Gln Arg Asp Leu His Asn Leu
            275                 280                 285
Met Val Asp Leu Arg Gly Leu Val His Ala Ala Gly Pro Gly Gln Asp
    290                 295                 300
Ser Gly Ser Gln Ala Gly Ser Pro Pro Thr Arg Asp Arg Asp Val Asp
305                 310                 315                 320
Val Leu Ser Ala Ala Leu Lys Glu Gln Leu Ser His Ser Arg Gln Val
            325                 330                 335
His Ser Cys Leu Glu Gly Leu Arg Glu Gln Leu Asp Gly Leu Glu Lys
            340                 345                 350
```

```
Thr Cys Ser Gln Met Ala Gly Val Val Gln Leu Val Lys Ser Ala Ala
        355                 360             365
His Pro Gly Leu Val Glu Pro Ala Asp Gly Ala Met Pro Ser Phe Leu
    370             375                 380
Leu Glu Gln Gly Ser Met Ile Leu Ala Leu Ser Asp Thr Glu Gln Arg
385             390                 395                 400
Leu Glu Ala Gln Val Asn Arg Asn Thr Ile Tyr Ser Thr Leu Val Thr
            405                 410                 415
Cys Val Thr Phe Val Ala Thr Leu Pro Val Leu Tyr Met Leu Phe Lys
            420                 425                 430
Ala Ser
434
```

```
<210> 743
<211> 211
<212> Amino acid
<213> Homo sapiens
```

```
<400> 743
Asn Leu Pro Pro Leu Thr Pro Gln Pro Gly Pro Arg Leu Ala Gly Ser
1               5                   10                  15
Gly Pro Ser His Trp Phe Ser Pro Leu Ser Leu Pro Val Ala Ser Lys
        20                  25                  30
Ala Pro Gly Thr Met Ala Gln Ala Leu Gly Glu Asp Leu Val Gln Pro
        35                  40                  45
Pro Glu Leu Gln Asp Asp Ser Ser Ser Leu Gly Ser Asp Ser Glu Leu
    50                  55                  60
Ser Gly Pro Gly Pro Tyr Arg Gln Ala Asp Arg Tyr Gly Phe Ile Gly
65                  70                  75                  80
Gly Ser Ser Ala Glu Pro Gly Pro Gly His Pro Pro Ala Asp Leu Ile
            85                  90                  95
Arg Gln Arg Glu Met Lys Trp Val Glu Met Thr Ser His Trp Glu Lys
            100                 105                 110
Thr Met Ser Arg Arg Tyr Lys Lys Val Lys Met Gln Cys Arg Lys Gly
        115                 120                 125
Ile Pro Ser Ala Leu Arg Ala Arg Cys Trp Pro Leu Leu Cys Gly Ala
    130                 135                 140
His Val Cys Gln Lys Asn Ser Pro Gly Thr Tyr Gln Glu Leu Ala Glu
145                 150                 155                 160
Ala Pro Gly Asp Pro Gln Trp Met Glu Thr Ile Gly Arg Asp Leu His
            165                 170                 175
Arg Gln Phe Pro Leu His Glu Met Phe Val Ser Pro Gln Gly His Gly
            180                 185                 190
Gln Gln Gly Leu Leu Gln Val Leu Lys Ala Tyr Thr Leu Tyr Arg Pro
        195                 200                 205
Glu Gln Gly
210 211
```

```
<210> 744
<211> 55
<212> Amino acid
<213> Homo sapiens
```

```
<400> 744
```

```
Leu Arg Gly Met Ala Ala Ala Ala Ala Gly Pro Ala Ala Ser Gln Arg
1               5                  10                  15
Phe Phe Gln Ser Phe Ser Asp Ala Leu Ile Asp Gln Asp Pro Gln Ala
            20                  25                  30
Ala Leu Glu Val Gly Glu Pro Phe Leu Leu Pro Pro Leu Pro Ala Asp
            35                  40                  45
Pro Pro Pro Ser Ser Thr Ala
    50                  55
```

<210> 745
<211> 182
<212> Amino acid
<213> Homo sapiens

<400> 745
```
Trp Ala Cys Phe Arg Ser Ala His Cys Ser Arg His Leu Arg Asn Arg
1               5                  10                  15
Ile Phe Met Tyr Leu Tyr Trp Asp Lys Thr Arg Ser Pro Val Cys Lys
            20                  25                  30
Gly Pro Ala Leu Arg Glu Glu Arg Pro Gln Pro Arg Leu Lys Leu Glu
            35                  40                  45
Asp Tyr Lys Asp Arg Leu Lys Ser Gly Glu His Leu Asn Pro Asp Gln
    50                  55                  60
Leu Glu Ala Val Glu Lys Tyr Glu Glu Val Leu His Asn Leu Glu Phe
65                  70                  75                  80
Ala Lys Glu Leu Gln Lys Thr Phe Ser Gly Leu Ser Leu Asp Leu Leu
                85                  90                  95
Lys Ala Gln Lys Lys Ala Gln Arg Arg Glu His Met Leu Lys Leu Glu
            100                 105                 110
Ala Glu Lys Lys Lys Leu Arg Thr Ile Leu Gln Val Gln Tyr Val Leu
            115                 120                 125
Gln Asn Leu Thr Gln Glu His Val Gln Lys Asp Phe Lys Gly Gly Leu
    130                 135                 140
Asn Gly Ala Val Tyr Leu Pro Ser Lys Glu Leu Asp Tyr Leu Ile Lys
145                 150                 155                 160
Phe Ser Lys Leu Thr Cys Pro Glu Arg Asn Glu Ser Leu Arg Gln Thr
            165                 170                 175
Leu Glu Gly Ser Thr Val
            180     182
```

<210> 746
<211> 136
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(136)
<223> X = any amino acid or stop code

<400> 746
```
Xaa Ala Gly Val Gln Met Lys Leu Glu Phe Leu Gln Arg Lys Phe Trp
1               5                  10                  15
Ala Ala Thr Arg Gln Cys Ser Thr Val Asp Gly Pro Cys Thr Gln Ser
```

```
                      20                25                30
Cys Glu Asp Ser Asp Leu Asp Cys Phe Val Ile Asp Asn Asn Gly Phe
          35                40                45
Ile Leu Ile Ser Lys Arg Ser Arg Glu Thr Gly Arg Phe Leu Gly Glu
      50                55                60
Val Asp Gly Ala Val Leu Thr Gln Leu Leu Ser Met Gly Val Phe Ser
  65                70                75                80
Gln Val Thr Met Tyr Asp Tyr Gln Ala Met Cys Lys Pro Ser Ser His
              85                90                95
His His Ser Ala Ala Gln Pro Leu Val Ser Pro Ile Ser Ala Phe Leu
          100               105               110
Thr Ala Thr Arg Trp Leu Leu Gln Glu Leu Val Leu Phe Leu Leu Glu
          115               120               125
Trp Ser Val Trp Gly Ser Xaa  *
130               135
```

```
      <210> 747
      <211> 156
      <212>Amino acid
      <213> Homo sapiens
```

```
      <400> 747
Cys Arg Gly Arg Leu Ala Gln Leu Glu Glu Ala Ala Val Ala Ala Thr
  1           5                10                15
Met Ser Ala Gly Asp Ala Val Cys Thr Gly Trp Leu Val Lys Ser Pro
              20                25                30
Pro Glu Arg Lys Leu Gln Arg Tyr Ala Trp Arg Lys Arg Trp Phe Val
          35                40                45
Leu Arg Arg Gly Arg Met Ser Gly Asn Pro Asp Val Leu Glu Tyr Tyr
      50                55                60
Arg Asn Lys His Ser Ser Lys Pro Ile Arg Val Ile Asp Leu Ser Glu
  65                70                75                80
Cys Ala Val Trp Lys His Val Gly Pro Ser Phe Val Arg Lys Glu Phe
              85                90                95
Gln Asn Asn Phe Val Phe Ile Val Lys Thr Thr Ser Arg Thr Phe Tyr
          100               105               110
Leu Val Ala Lys Thr Glu Gln Glu Met Gln Val Trp Val His Ser Ile
          115               120               125
Ser Gln Val Cys Asn Leu Gly His Leu Glu Asp Gly Ala Ala Asp Ser
130               135               140
Met Glu Ser Leu Ser Tyr Thr Arg Ser Tyr Leu Gln
145               150               155 156
```

```
      <210> 748
      <211> 55
      <212>Amino acid
      <213> Homo sapiens
```

```
      <400> 748
Ile Pro Ala Val Pro Leu Thr Ser Cys Val Thr Val Gly Ser Tyr Ser
  1           5                10                15
Leu Ser Val Arg Asp Tyr Asp Pro Arg Gln Gly Asp Thr Val Lys His
              20                25                30
Tyr Lys Ile Arg Thr Leu Asp Lys Arg Gly Phe Tyr Ile Ser Pro Arg
```

```
                    35                  40                      45
Ser Thr Phe Ser Thr Leu Gln
    50                  55


        <210> 749
        <211> 381
        <212>Amino acid
        <213> Homo sapiens



        <400> 749
Lys Asp Ser Val Leu Asn Ile Ala Arg Gly Lys Lys Tyr Gly Glu Lys
1               5                   10                  15
Thr Lys Arg Val Ser Ser Arg Lys Lys Pro Ala Leu Lys Cys Thr Ser
            20                  25                  30
Gln Lys Gln Pro Ala Leu Lys Ala Ile Cys Asp Lys Glu Asp Ser Val
        35                  40                  45
Pro Asn Thr Ala Thr Glu Lys Lys Asp Glu Gln Ile Ser Gly Thr Val
    50                  55                  60
Ser Ser Gln Lys Gln Pro Ala Leu Lys Ala Thr Ser Asp Lys Lys Asp
65                  70                  75                  80
Ser Val Ser Asn Ile Pro Thr Glu Ile Lys Asp Gly Gln Gln Ser Gly
                85                  90                  95
Thr Val Ser Ser Gln Lys Gln Pro Ala Trp Lys Ala Thr Ser Val Lys
            100                 105                 110
Lys Asp Ser Val Ser Asn Ile Ala Thr Glu Ile Lys Asp Gly Gln Ile
        115                 120                 125
Arg Gly Thr Val Ser Ser Gln Arg Gln Pro Ala Leu Lys Ala Thr Gly
    130                 135                 140
Asp Glu Lys Asp Ser Val Ser Asn Ile Ala Arg Glu Ile Lys Asp Gly
145                 150                 155                 160
Glu Lys Ser Gly Thr Val Ser Pro Gln Lys Gln Ser Ala Gln Lys Val
            165                 170                 175
Ile Phe Lys Lys Lys Val Ser Leu Leu Asn Ile Ala Thr Arg Ile Thr
        180                 185                 190
Gly Gly Trp Lys Ser Gly Thr Glu Tyr Pro Glu Asn Leu Pro Thr Leu
    195                 200                 205
Lys Ala Thr Ile Glu Asn Lys Asn Ser Val Leu Asn Thr Ala Thr Lys
    210                 215                 220
Met Lys Asp Val Gln Thr Ser Thr Pro Glu Gln Asp Leu Glu Met Ala
225                 230                 235                 240
Ser Glu Gly Glu Gln Lys Arg Leu Glu Glu Tyr Glu Asn Asn Gln Pro
            245                 250                 255
Gln Val Lys Asn Gln Ile His Ser Arg Asp Asp Leu Asp Asp Ile Ile
        260                 265                 270
Gln Ser Ser Gln Thr Val Ser Glu Asp Gly Asp Ser Leu Cys Cys Asn
    275                 280                 285
Cys Lys Asn Val Ile Leu Leu Ile Asp Gln His Glu Met Lys Cys Lys
    290                 295                 300
Asp Cys Val His Leu Leu Lys Ile Lys Lys Thr Phe Cys Leu Cys Lys
305                 310                 315                 320
Arg Leu Thr Glu Leu Lys Asp Asn His Cys Glu Gln Leu Arg Val Lys
            325                 330                 335
Ile Arg Lys Leu Lys Asn Lys Ala Ser Val Leu Gln Lys Arg Leu Ser
        340                 345                 350
Glu Lys Glu Glu Ile Lys Ser Gln Leu Lys His Glu Thr Leu Glu Leu
    355                 360                 365
Glu Lys Glu Leu Cys Ser Leu Arg Phe Ala Ile Gln Gln
    370                 375             380 381
```

```
<210> 750
<211> 296
<212>Amino acid
<213> Homo sapiens
```

```
<400> 750
Ser Pro Leu Arg Tyr Arg Ala Gly Gln Ser Gly Ser Thr Ile Ser Ser
 1               5                  10                  15
Ser Ser Cys Ala Met Trp Arg Cys Gly Gly Arg Gln Gly Leu Cys Val
            20                  25                  30
Leu Arg Arg Leu Ser Gly Gly His Ala His His Arg Ala Trp Arg Trp
            35                  40                  45
Asn Ser Asn Arg Ala Cys Glu Arg Ala Leu Gln Tyr Lys Leu Gly Asp
        50                  55                  60
Lys Ile His Gly Phe Thr Val Asn Gln Val Thr Ser Val Pro Glu Leu
 65                  70                  75                  80
Phe Leu Thr Ala Val Lys Leu Thr His Asp Asp Thr Gly Ala Arg Tyr
                85                  90                  95
Leu His Leu Ala Arg Glu Asp Thr Asn Asn Leu Phe Ser Val Gln Phe
            100                 105                 110
Arg Thr Thr Pro Met Asp Ser Thr Gly Val Pro His Ile Leu Glu His
            115                 120                 125
Thr Val Leu Cys Gly Ser Gln Lys Tyr Pro Cys Arg Asp Pro Phe Phe
        130                 135                 140
Lys Met Leu Asn Arg Ser Leu Ser Thr Phe Met Asn Ala Phe Thr Ala
145                 150                 155                 160
Ser Asp Tyr Thr Leu Tyr Pro Phe Ser Thr Gln Asn Pro Lys Asp Phe
                165                 170                 175
Gln Asn Leu Leu Ser Val Tyr Leu Asp Ala Thr Phe Phe Pro Cys Leu
            180                 185                 190
Arg Glu Leu Asp Phe Trp Gln Glu Gly Trp Arg Leu Glu His Glu Asn
            195                 200                 205
Pro Ser Asp Pro Gln Thr Pro Leu Val Phe Lys Gly Val Val Phe Asn
        210                 215                 220
Glu Met Lys Gly Ala Phe Thr Asp Asn Glu Arg Ile Phe Ser Gln His
225                 230                 235                 240
Leu Gln Asn Arg Leu Leu Pro Asp His Thr Tyr Ser Val Val Ser Gly
            245                 250                 255
Gly Asp Pro Leu Cys Ile Pro Glu Leu Thr Trp Glu Gln Leu Lys Gln
            260                 265                 270
Phe His Ala Thr His Tyr His Pro Ser Asn Ala Arg Phe Phe Thr Tyr
            275                 280                 285
Gly Asn Phe Pro Leu Asp Gln His
    290                 295 296
```

```
<210> 751
<211> 163
<212>Amino acid
<213> Homo sapiens
```

```
<400> 751
Arg Gly Ala Lys Ala Lys Ser Ala Val Leu Pro Pro Gly Pro Pro Cys
 1               5                  10                  15
Ser Ser Ile Leu Ile Leu Ser Pro Pro Ala Pro Leu Thr Pro Arg Ser
```

```
                          20                    25                    30
Pro Gly Thr Glu Ala Thr Arg Pro Thr Ala Met Ser Lys Ser Leu Lys
              35                    40                    45
Lys Lys Ser His Trp Thr Ser Lys Val His Glu Ser Val Ile Gly Arg
      50                    55                    60
Asn Pro Glu Gly Gln Leu Gly Phe Glu Leu Lys Gly Gly Ala Glu Asn
  65                    70                  75                    80
Gly Gln Phe Pro Tyr Leu Gly Glu Val Lys Pro Gly Lys Val Ala Tyr
              85                    90                    95
Glu Ser Gly Ser Lys Leu Val Ser Glu Glu Leu Leu Leu Glu Val Asn
            100                   105                   110
Glu Thr Pro Val Ala Gly Leu Thr Ile Arg Asp Val Leu Ala Val Ile
          115                   120                   125
Lys His Cys Lys Asp Pro Leu Arg Leu Lys Cys Val Lys Gln Gly Glu
      130                   135                   140
Ser Ser Gly Leu Leu Ser Val Leu Pro Gly Gly Gly Thr Ala Arg Gly
145                   150                   155                   160
Ala Gly Gln
          163
```

```
        <210> 752
        <211> 99
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 752
Ser His Arg Pro Gln Pro Asp Ala Trp Arg Gln Gly Asn Ala Phe Gln
  1               5                  10                    15
Cys Val Gln Lys Glu Lys Met Gln Val Ser Ser Ala Glu Val Arg Ile
              20                    25                    30
Gly Pro Met Arg Leu Thr Gln Asp Pro Ile Gln Val Leu Leu Ile Phe
          35                    40                    45
Ala Lys Glu Asp Ser Gln Ser Asp Gly Phe Trp Trp Ala Cys Asp Arg
      50                    55                    60
Ala Gly Tyr Arg Cys Asn Ile Ala Arg Thr Pro Glu Ser Ala Leu Glu
  65                    70                  75                    80
Cys Phe Leu Asp Lys His His Glu Ile Ile Val Ile Asp His Arg Gln
                  85                    90                    95
Thr Gln Asn
          99
```

```
        <210> 753
        <211> 193
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 753
Phe Arg Leu Ala Gly Cys Gly His Leu Leu Val Ser Leu Leu Gly Leu
  1               5                  10                    15
Leu Leu Leu Leu Ala Arg Ser Gly Thr Arg Ala Leu Val Cys Leu Pro
              20                    25                    30
Cys Asp Glu Ser Lys Cys Glu Glu Pro Arg Asn Cys Pro Gly Ser Ile
          35                    40                    45
Val Gln Gly Val Cys Gly Cys Cys Tyr Thr Cys Ala Ser Gln Arg Asn
```

```
        50                    55                    60
Glu Ser Cys Gly Gly Thr Phe Gly Ile Tyr Gly Thr Cys Asp Arg Gly
65                    70                    75                    80
Leu Arg Cys Val Ile Arg Pro Pro Leu Asn Gly Asp Ser Leu Thr Glu
                85                    90                    95
Tyr Glu Ala Gly Val Cys Glu Asp Glu Asn Trp Thr Asp Asp Gln Leu
            100                   105                   110
Leu Gly Phe Lys Pro Cys Asn Glu Asn Leu Ile Ala Gly Cys Asn Ile
            115                   120                   125
Ile Asn Gly Lys Cys Glu Cys Asn Thr Ile Arg Thr Cys Ser Asn Pro
        130           .         135                   140
Phe Glu Phe Pro Ser Gln Asp Met Cys Leu Ser Ala Leu Lys Arg Ile
145                   150                   155                   160
Glu Glu Glu Lys Pro Asp Cys Ser Lys Ala Arg Cys Glu Val Gln Phe
                165                   170                   175
Ser Pro Arg Cys Pro Glu Asp Ser Val Leu Ile Glu Gly Tyr Ala Pro
            180                   185                   190
Pro
193
```

```
        <210> 754
        <211> 73
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 754
Phe Arg Met Ala Ala Asn Val Gly Ser Met Phe Gln Tyr Trp Lys Arg
1                   5           .         10                    15
Phe Asp Leu Gln Gln Leu Gln Arg Glu Leu Asp Ala Thr Ala Thr Val
                20    .                    25                    30    .
Leu Ala Asn Arg Gln Asp Glu Ser Glu Gln Ser Arg Lys Arg Leu Ile
            35                    40  .                  45
Glu Gln Ser Arg Glu Phe Lys Lys Asn Thr Pro Glu Val Arg Arg Val
        50                    55                    60
Thr Ile Val Phe Ala Leu Lys Gly Ser
65                    70          73
```

```
        <210> 755
        <211> 83
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 755
Glu Thr Leu Ser Cys Arg Ile Met Asp His Pro Ser Arg Glu Lys Asp
1                   5                     10                    15
Glu Arg Gln Arg Thr Thr Lys Pro Met Ala Gln Arg Ser Ala His Cys
                20                    25                    30
Ser Arg Pro Ser Gly Ser Ser Ser Ser Gly Val Leu Met Val Gly
            35                    40                    45
Pro Asn Phe Arg Val Gly Lys Lys Ile Gly Cys Gly Asn Phe Gly Glu
        50                    55                    60
Leu Arg Leu Gly Glu Gly Leu Pro Gln Val Tyr Tyr Phe Gly Pro Cys
65            .         70                    75                    80
Gly Lys Tyr
```

```
<210> 756
<211> 100
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(100)
<223> X = any amino acid or stop code
```

```
<400> 756
Gly Cys Cys Lys Asp Xaa His Ser Gly Val Ile Gly Arg Ser Trp Ala
1               5                   10                  15
Met Leu Phe Ala Ser Gly Gly Phe Gln Val Lys Leu Tyr Asp Ile Glu
            20                  25                  30
Gln Gln Gln Ile Arg Asn Ala Leu Glu Asn Ile Arg Trp Ala Ser Arg
        35                  40                  45
Arg Ser Pro Glu Gly Met Glu Val Gly Leu Phe Leu Ser Val Gly Leu
    50                  55                  60
Val Cys His Ile Leu Lys Ala Met Arg Ile Cys Asp Val Thr Phe Ser
65                  70                  75                  80
Ser Asp Gly Tyr Cys Ser Ala Ser Glu Leu Val Lys Ala Arg Pro Thr
                85                  90                  95
Val Ala Gly Met
            100
```

```
<210> 757
<211> 130
<212>Amino acid
<213> Homo sapiens
```

```
<400> 757
Asn Ser Arg Val Asp Asp Phe Val Ser Ala Arg Pro Lys Pro Arg Pro
1               5                   10                  15
Leu Pro Arg Ala Arg Gly Met Val Val Val Thr Gly Arg Glu Pro Asp
            20                  25                  30
Ser Arg Arg Gln Asp Gly Ala Met Ser Ser Ser Asp Ala Glu Asp Asp
        35                  40                  45
Phe Leu Glu Pro Ala Thr Pro Thr Ala Thr Gln Ala Gly His Ala Leu
    50                  55                  60
Pro Pro Ala Ala Thr Gly Ser Phe Leu Arg Leu Phe Pro Leu Thr Ser
65                  70                  75                  80
Glu Gly Leu Thr Ser Leu His Ala Cys Pro His Cys Gly Ala Thr Lys
                85                  90                  95
Thr Pro Cys Trp Gln Pro Cys Ser Val Gly Gly Thr Thr Ser Pro Arg
            100                 105                 110
Thr Pro Arg Ala Gly Thr Ser Ser Thr Glu Met Ala His Thr Leu Glu
        115                 120                 125
Met Cys
    130
```

```
     <210> 758
     <211> 121
     <212> Amino acid
     <213> Homo sapiens




     <400> 758
Arg Ala Leu Trp Val Gly Gly Cys Ser Gly Glu Ala Cys Gly Ile Gly
 1            5                    10                   15
Met Ser Gly Leu Leu Thr Asp Pro Glu Gln Arg Ala Gln Glu Pro Arg
             20                   25                   30
Tyr Pro Gly Phe Val Leu Gly Leu Asp Val Gly Ser Ser Val Ile Arg
         35                   40                   45
Cys His Val Tyr Asp Arg Ala Ala Arg Val Cys Gly Ser Ser Val Gln
    50                   55                   60
Lys Val Glu Asn Leu Tyr Pro Gln Ile Gly Trp Val Glu Ile Asp Pro
65                   70                   75                   80
Asp Val Leu Trp Ile Gln Phe Val Ala Val Ile Lys Glu Ala Val Lys
             85                   90                   95
Ala Ala Gly Ile Gln Met Asn Gln Ile Val Gly Leu Gly Ile Ser Thr
            100                  105                  110
Gln Arg Ala Thr Phe Ile Thr Trp Asn
         115                  120 121



     <210> 759
     <211> 210
     <212> Amino acid
     <213> Homo sapiens




     <400> 759
Gly Leu Ala Ala Glu Gln Ser Met Gln Phe Val Lys Leu Trp Cys Gly
 1            5                    10                   15
Cys Ser Gly Glu Phe Pro Thr Arg Leu Arg Arg Arg Thr Pro Leu Thr
             20                   25                   30
Glu Ala Met Glu Gly Gly Pro Ala Val Cys Cys Gln Asp Pro Arg Ala
         35                   40                   45
Glu Leu Val Glu Arg Val Ala Ala Ile Asp Val Thr His Leu Glu Glu
    50                   55                   60
Ala Asp Gly Gly Pro Glu Pro Thr Arg Asn Gly Val Asp Pro Pro Pro
65                   70                   75                   80
Arg Ala Arg Ala Ala Ser Val Ile Pro Gly Ser Thr Ser Arg Leu Leu
             85                   90                   95
Pro Ala Arg Pro Ser Leu Ser Ala Arg Lys Leu Ser Leu Gln Glu Arg
            100                  105                  110
Pro Ala Gly Ser Tyr Leu Glu Ala Gln Ala Gly Pro Tyr Ala Thr Gly
            115                  120                  125
Pro Ala Ser His Ile Ser Pro Arg Ala Trp Arg Arg Pro Thr Ile Glu
    130                  135                  140
Ser His His Val Ala Ile Ser Asp Ala Glu Asp Cys Val Gln Leu Asn
145                  150                  155                  160
Gln Tyr Lys Leu Gln Ser Glu Ile Gly Lys Gly Ala Tyr Gly Val Val
             165                  170                  175
Arg Leu Ala Tyr Asn Glu Ser Glu Asp Arg His Tyr Ala Met Lys Val
         180                  185                  190
Leu Ser Lys Lys Lys Leu Leu Lys Gln Tyr Gly Phe Pro Arg Arg Pro
         195                  200                  205
```

416

Pro Pro
   210

        <210> 760
        <211> 172
        <212>Amino acid
        <213> Homo sapiens

        <400> 760
Phe Val Tyr Gly Lys Pro Val Thr Leu Trp Pro Thr Ile Ser Ser Val
 1   5   10   15
Val Pro Ser Thr Phe Leu Gly Leu Gly Asn Tyr Glu Val Glu Val Glu
            20   25   30
Ala Glu Pro Asp Val Arg Gly Pro Glu Ile Val Thr Met Gly Glu Asn
            35   40   45
Asp Pro Pro Ala Val Glu Ala Pro Phe Ser Phe Arg Ser Leu Phe Gly
        50   55   60
Leu Asp Asp Leu Lys Ile Ser Pro Val Ala Pro Asp Ala Asp Ala Val
 65   70   75   80
Ala Ala Gln Ile Leu Ser Leu Leu Pro Leu Lys Phe Phe Pro Ile Ile
                85   90   95
Val Ile Gly Ile Ile Ala Leu Ile Leu Ala Leu Ala Ile Gly Leu Gly
            100   105   110
Ile His Phe Asp Cys Ser Gly Lys Tyr Arg Cys Arg Ser Ser Phe Lys
        115   120   125
Cys Ile Glu Leu Ile Ala Arg Cys Asp Gly Val Ser Asp Cys Lys Asp
        130   135   140
Gly Glu Asp Glu Tyr Arg Cys Val Arg Val Gly Gly Gln Asn Ala Ala
145   150   155   160
Leu Gln Val Phe Thr Ala Ala Ser Arg Lys Thr Met
                165   170   172

        <210> 761
        <211> 104
        <212>Amino acid
        <213> Homo sapiens

        <400> 761
Ser Leu Ala Met Pro Phe Gly Cys Val Thr Leu Gly Asp Lys Lys Asn
 1   5   10   15
Tyr Asn Gln Pro Ser Glu Val Thr Asp Arg Tyr Asp Leu Gly Gln Val
            20   25   30
Ile Lys Thr Glu Glu Phe Cys Glu Ile Phe Arg Ala Lys Asp Lys Thr
            35   40   45
Thr Gly Lys Leu His Thr Cys Lys Lys Phe Gln Lys Arg Asp Gly Arg
        50   55   60
Lys Val Arg Lys Ala Ala Lys Asn Glu Ile Gly Ile Leu Lys Met Val
 65   70   75   80
Lys His Pro Asn Ile Leu Gln Leu Val Asp Val Phe Val Thr Arg Lys
                85   90   95
Glu Tyr Phe Ile Phe Leu Glu Leu
            100   104

```
<210> 762
<211> 249
<212>Amino acid.
<213> Homo sapiens
```

```
<400> 762
Gln Arg Arg Arg Phe Arg Ala Gly Leu Trp Gly Gly His Gly Leu Thr
1               5                   10                  15
Asp Gly Leu Arg Arg Asn Gly Gly Cys Gly Cys Ser Ala Arg Val Pro
            20                  25                  30
Arg Val Gly Glu Arg Leu Arg Gly His Arg Cys Pro Asp Pro Leu Cys
        35                  40                  45
Leu Leu Leu Asp Met Leu Phe Leu Ser Phe His Ala Gly Ser Trp Glu
    50                  55                  60
Ser Trp Cys Cys Cys Cys Leu Ile Pro Ala Asp Arg Pro Trp Asp Arg
65                  70                  75                  80
Gly Gln His Trp Gln Leu Glu Met Ala Asp Thr Arg Ser Val His Glu
            85                  90                  95
Thr Arg Phe Glu Ala Ala Val Lys Val Ile Gln Ser Leu Pro Lys Asn
            100                 105                 110
Gly Ser Phe Gln Pro Thr Asn Glu Met Met Leu Lys Phe Tyr Ser Phe
        115                 120                 125
Tyr Lys Gln Ala Thr Glu Gly Pro Cys Lys Leu Ser Arg Pro Gly Phe
    130                 135                 140
Trp Asp Pro Ile Gly Arg Tyr Lys Trp Asp Ala Trp Ser Ser Leu Gly
145                 150                 155                 160
Asp Met Thr Lys Glu Glu Ala Met Ile Ala Tyr Val Glu Glu Met Lys
            165                 170                 175
Lys Ile Ile Glu Thr Met Pro Met Thr Glu Lys Val Glu Glu Leu Leu
            180                 185                 190
Arg Val Ile Gly Pro Phe Tyr Glu Ile Val Glu Asp Lys Lys Ser Gly
        195                 200                 205
Arg Ser Ser Asp Ile Thr Ser Asp Leu Gly Asn Val Leu Thr Ser Thr
    210                 215                 220
Pro Asn Ala Lys Thr Val Asn Gly Lys Ala Glu Ser Ser Asp Ser Gly
225                 230                 235                 240
Ala Glu Ser Glu Glu Glu Glu Ala Cys
            245                 249
```

```
<210> 763
<211> 184
<212>Amino acid
<213> Homo sapiens
```

```
<400> 763
Ser Cys Phe Lys Gly Arg Thr Gly Gly Arg Ser Gly Ser Ser Gly Asp
1               5                   10                  15
Ser Ser Arg Trp Ala Arg Cys Gly Arg His Phe Ser Ala Ser Thr Glu
            20                  25                  30
Glu Pro Pro Leu Ser Gln Pro Cys Ser Ala Leu Pro Arg Ser Gly Arg
        35                  40                  45
Arg Gly Cys Ala Val Pro Ser Ser Val Thr Lys Met Leu Ser Phe Phe
    50                  55                  60
Arg Arg Thr Leu Gly Arg Arg Ser Met Arg Lys His Ala Glu Lys Glu
65                  70                  75                  80
```

```
Arg Leu Arg Glu Ala Gln Arg Ala Ala Thr His Ile Pro Ala Ala Gly
            85                      90                      95
Asp Ser Lys Ser Ile Ile Thr Cys Arg Val Ser Leu Leu Asp Gly Thr
            100                     105                     110
Asp Val Ser Val Asp Leu Pro Lys Lys Ala Lys Gly Gln Glu Leu Phe
            115                     120                     125
Asp Gln Ile Met Tyr His Leu Asp Leu Ile Glu Ser Asp Tyr Phe Gly
            130                     135                     140 .
Leu Arg Phe Met Asp Ser Ala Gln Val Ala His Trp Leu Asp Gly Thr
145                     150                     155                     160
Lys Ser Ile.Lys Lys Gln Val Lys Ile Gly Ser Pro Tyr Cys Leu His
            165                     170                     175
Leu Arg Val Lys Phe Tyr Ser Ser
            180             184
```

```
            <210> 764
            <211> 138
            <212>Amino acid
            <213> Homo sapiens
```

```
            <400> 764
Glu Ser Arg Glu Arg Ser Gly Asn Arg Arg Gly Ala Glu Asp Arg Gly
1                   5                   10                  15
Thr Cys Gly Leu Gln Ser Pro Ser Ala Met Leu Gly Ala Lys Pro His
            20                  25                  30
Trp Leu Pro Gly Pro Leu His Ser Pro Gly Leu Pro Leu Val Leu Val
            35                  40                  45
Leu Leu Ala Leu Gly Ala Gly Trp Ala Gln Glu Gly Ser Glu Pro Val
            50                  55                  60
Leu Leu Glu Gly Glu Cys Leu Val Val Cys Glu Pro Gly Arg Ala Ala
65                  70                  75                  80
Ala Gly Gly Pro Gly Gly Ala Ala Leu Gly Glu Ala Pro Pro Gly Arg
            85                  90                  95
Val Ala Phe Ala Ala Val Arg Ser His His His Glu Pro Ala Gly Glu
            100                 105                 110
Thr Gly Asn Gly Thr Ser Gly Ala Ile Tyr Phe Asp Gln Val Leu Val
            115                 120                 125
Asn Glu Gly Gly Gly Phe Asp Arg Ala Ser
130                     135     138
```

```
            <210> 765
            <211> 168
            <212>Amino acid
            <213> Homo sapiens
```

```
            <400> 765
Glu Asp Val Lys Ser Tyr Tyr Thr Val His Leu Pro Gln Leu Glu Asn
1                   5                   10                  15
Ile Asn Ser Gly Glu Thr Arg Thr Ile Ser His Phe His Tyr Thr Thr
            20                  25 .                30 .
Trp Pro Asp Phe Gly Val Pro Gln Ser Pro Ala Ser Phe Leu Asn Phe
            35                  40                  45
Leu Phe Lys Val Arg Glu Ser Gly Ser Leu Asn Pro Asp His Gly Pro
            50                  55                  60
```

```
Val Val Ile His Arg Ser Ala Gly Thr Gly Arg Ser Ser Thr Phe Ser
65              70                  75                      80
Val Val His Thr Cys Leu Val Leu Met Glu Lys Gly Asp Asp Ile Asn
                85                  90                      95
Ile Lys Gln Val Leu Leu Asn Ile Arg Lys Phe Gln Met Gly Leu Ile
            100                 105             110
Gln Thr Pro Asp Gln Leu Arg Phe Ser Tyr Met Ala Ile Thr Glu Gly
        115                 120                 125
Ala Lys Cys Val Lys Gly Asp Ser Ser Ile Gln Lys Arg Trp Lys Glu
    130                 135                 140
Leu Ser Lys Glu Asp Leu Pro Pro Ala Phe Asp His Ser Pro Asn Lys
145                 150                 155                 160
Ile Met Thr Glu Lys Tyr Asn Arg
                165         168
```

```
<210> 766
<211> 255
<212>Amino acid
<213> Homo sapiens
```

```
<400> 766
Leu Asn Arg Gln Arg Cys Gly Asp Gln Val Leu Val Pro Gly Thr Gly
1               5                   10                  15
Leu Ala Ala Ile Leu Arg Thr Leu Pro Met Phe His Asp Glu Glu His
                20                  25                  30
Ala Arg Ala Arg Gly Leu Ser Glu Asp Thr Leu Val Leu Pro Pro Ala
        35                  40                  45
Ser Arg Asn Gln Arg Ile Leu Tyr Thr Val Leu Glu Cys Gln Pro Leu
    50                  55                  60
Phe Asp Ser Ser Asp Met Thr Ile Ala Glu Trp Val Cys Leu Ala Gln
65                  70                  75                      80
Thr Ile Lys Arg His Tyr Glu Gln Tyr His Gly Phe Val Val Ile His
                85                  90                  95
Gly Thr Asp Thr Met Ala Phe Ala Ala Ser Met Leu Ser Phe Met Leu
            100                 105             110
Glu Asn Leu Gln Lys Thr Val Ile Leu Thr Gly Ala Gln Val Pro Ile
        115                 120                 125
His Ala Leu Trp Ser Asp Gly Arg Glu Asn Leu Leu Gly Ala Leu Leu
    130                 135                 140
Met Ala Gly Gln Tyr Val Ile Pro Glu Val Cys Leu Phe Phe Gln Asn
145                 150                 155                 160
Gln Leu Phe Arg Gly Asn Arg Ala Thr Lys Val Asp Ala Arg Arg Phe
                165             170                 175
Ala Ala Phe Cys Ser Pro Asn Leu Leu Pro Leu Ala Thr Val Gly Ala
            180                 185                 190
Asp Ile Thr Ile Asn Arg Glu Leu Val Arg Lys Val Asp Gly Lys Ala
        195                 200                 205
Gly Leu Val Val His Ser Ser Met Glu Gln Asp Val Gly Leu Leu Arg
    210                 215             220
Leu Tyr Pro Gly Ile Pro Ala Ala Leu Val Arg Ala Phe Leu Gln Pro
225                 230                 235                 240
Pro Leu Lys Gly Val Val Met Glu Thr Phe Gly Ser Gly Asn Gly
                245                 250                 255
```

```
<210> 767
<211> 260
<212>Amino acid
<213> Homo sapiens
```

```
    <400> 767
Leu Phe Arg Leu Ala Pro Gly Phe Leu Arg Ser Leu Ala Arg Gln Gly
 1               5                  10                      15
Tyr His Gln Ile Trp Ala Phe Pro Phe Leu Pro Ser Gly Ala Thr Ala
            20                  25                  30
Thr Trp Pro Ala Ala Ser Arg Ser Arg Ser Leu Ala Ala Arg Ser Leu
            35                  40                  45
Pro Arg Ser Pro Ala Arg Pro Gly Pro Asn Asp Ala Leu Leu Gly Glu
    50                  55                  60
His Asp Phe Arg Gly Gln Gly Val Arg Ala Gln Arg Phe Arg Phe Ser
65                  70                  75                      80
Glu Glu Pro Gly Pro Gly Ala Asp Gly Ala Val Leu Glu Val His Val
                85                  90                  95
Pro Gln Ile Gly Ala Gly Val Ser Leu Pro Gly Ile Leu Ala Ala Lys
           100                 105                 110
Cys Gly Ala Glu Val Ile Leu Ser Asp Ser Ser Glu Leu Pro His Cys
           115                 120                 125
Leu Glu Val Cys Arg Gln Ser Cys Gln Met Asn Asn Leu Pro His Leu
    130                 135                 140
Gln Val Val Gly Leu Thr Trp Gly His Ile Ser Trp Asp Leu Leu Ala
145                 150                 155                 160
Leu Pro Pro Gln Asp Ile Ile Leu Ala Ser Asp Val Phe Phe Glu Pro
                165                 170                 175
Glu Asp Phe Glu Asp Ile Leu Ala Thr Ile Tyr Phe Leu Met His Lys
            180                 185                 190
Asn Pro Lys Val Gln Leu Trp Ser Thr Tyr Gln Val Arg Ser Ala Asp
            195                 200                 205
Trp Ser Leu Glu Ala Leu Leu Tyr Lys Trp Asp Met Lys Cys Val His
    210                 215                 220
Ile Pro Leu Glu Ser Phe Asp Ala Asp Lys Glu Asp Ile Ala Glu Ser
225                 230                 235                 240
Thr Leu Pro Gly Arg His Thr Val Glu Met Leu Val Ile Ser Phe Ala
                245                 250                 255
Lys Asp Ser Leu
            260


    <210> 768
    <211> 200
    <212> Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(200)
    <223> X = any amino acid or stop code



    <400> 768
Ser Phe Ile Tyr Lys His Thr His Arg Ala Arg Phe Gly Pro Arg Ala
 1               5                  10                      15
Ile Val Ala Ser Pro Ala Leu Thr Ala Gly Pro His Val Ser Leu Thr
            20                  25                  30
Ala Ser Cys Arg Val Gly Met Trp Val Ser Cys Ser Pro Ser Pro Phe
        35                  40                  45
Leu His Pro Thr Asn Thr Leu Val Ala Val Leu Glu Arg Asp Thr Leu
```

```
                50                    55                    60
Gly Ile Arg Glu Val Arg Leu Phe Asn Ala Val Val Arg Trp Ser Glu
 65                    70                    75                    80
Ala Glu Cys Gln Arg Gln Gln Leu Gln Val Thr Pro Glu Asn Arg Arg
                85                    90                    95
Lys Val Leu Gly Lys Ala Leu Gly Leu Ile Arg Phe Pro Leu Met Thr
               100                   105                   110
Ile Glu Glu Phe Ala Ala Gly Asn Arg Ala Arg Ala Gln Gly Leu Val
               115                   120                   125
Trp Glu Gly Ser Gly Thr Gln Val Gly Ile Trp Cys Thr Glu Asp Ser
               130                   135                   140
Ala Pro Glu Phe Thr Ala Glu Ser Leu Ala Asp Ala Trp His Ile Gln
145                   150                   155                   160
Ile Gly Arg Asn Leu Ala Cys Glu Asp Ala Ser Thr Trp Ala Ile Cys
               165                   170                   175
Xaa Pro Arg Pro Gly Ser Val Pro Thr Val His Thr Ala Arg Pro Arg
               180                   185                   190
Leu Ser Cys Leu Ser Ser Cys Phe
               195                   200
```

```
        <210> 769
        <211> 33
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(33)
        <223> X = any amino acid or stop code
```

```
        <400> 769
Met Ala Ser Thr Gln Asp Ala Glu Leu Ala Val Ser Arg Xaa Arg Ala
 1                5                    10                   15
Ile Ala Leu Xaa Pro Gly Xaa Gln Ser Xaa Xaa Pro Ser Gln Lys Lys
               20                    25                   30
Lys
 33
```

```
        <210> 770
        <211> 599
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 770
Leu Leu Lys Ser Cys Gly Val Leu Leu Ser Gly Val Cys Ile Pro Cys
 1                5                    10                   15
Glu Gly Lys Gly Pro Thr Val Leu Val Ile Gln Thr Ala Val Pro Gln
               20                    25                   30
Asp Arg Pro Thr Lys Ser Ser Met Arg Ser Ala Ala Lys Pro Trp Asn
               35                    40                   45
Pro Ala Ile Arg Ala Gly Gly His Gly Pro Asp Arg Val Arg Pro Leu
  50                   55                    60
Pro Ala Ala Ser Ser Gly Met Lys Ser Ser Lys Ser Ser Thr Ser Leu
 65                   70                    75                   80
```

422

Ala Phe Glu Ser Arg Leu Ser Arg Leu Lys Arg Ala Ser Ser Glu Asp
                 85   90   95
Thr Leu Asn Lys Pro Gly Ser Thr Ala Ala Ser Gly Val Val Arg Leu
             100   105   110
Lys Lys Thr Ala Thr Ala Gly Ala Ile Ser Glu Leu Thr Glu Ser Arg
         115   120   125
Leu Arg Ser Gly Thr Gly Ala Phe Thr Thr Thr Lys Arg Thr Gly Ile
     130   135   140
Pro Ala Pro Arg Glu Phe Ser Val Thr Val Ser Arg Glu Arg Ser Val
145   150   155   160
Pro Arg Gly Pro Ser Asn Pro Arg Lys Ser Val Ser Ser Pro Thr Ser
             165   170   175
Ser Asn Thr Pro Thr Pro Thr Lys His Leu Arg Thr Pro Ser Thr Lys
             180   185   190
Pro Lys Gln Glu Asn Glu Gly Gly Glu Lys Val Arg Leu Ser Pro Lys
         195   200   205
Phe Arg Glu Leu Leu Ala Glu Ala Lys Ala Lys Asp Ser Glu Ile Asn
     210   215   220
Arg Leu Arg Ser Glu Leu Lys Lys Tyr Lys Glu Lys Arg Thr Leu Asn
225   230   235   240
Ala Glu Gly Thr Asp Ala Leu Gly Pro Asn Val Asp Gly Thr Ser Val
             245   250   255
Ser Pro Gly Asp Thr Glu Pro Met Ile Arg Ala Leu Glu Glu Lys Asn
             260   265   270
Lys Asn Phe Gln Lys Glu Leu Ser Asp Leu Glu Glu Glu Asn Arg Val
         275   280   285
Leu Lys Glu Lys Leu Ile Tyr Leu Glu His Ser Pro Asn Ser Glu Gly
     290   295   300
Ala Ala Ser His Thr Gly Asp Ser Ser Cys Pro Thr Ser Ile Thr Gln
305   310   315   320
Glu Ser Ser Phe Gly Ser Pro Thr Gly Asn Gln Leu Ser Ser Asp Ile
             325   330   335
Asp Glu Tyr Lys Lys Asn Ile His Gly Asn Ala Leu Arg Thr Ser Gly
             340   345   350
Ser Ser Ser Ser Asp Val Thr Lys Ala Ser Leu Ser Pro Asp Ala Ser
         355   360   365
Asp Phe Glu His Ile Thr Ala Glu Thr Pro Ser Arg Pro Leu Ser Ser
     370   375   380
Thr Ser Asn Pro Phe Lys Ser Ser Lys Cys Ser Thr Ala Gly Ser Ser
385   390   395   400
Pro Asn Ser Val Ser Glu Leu Ser Leu Ala Ser Leu Thr Glu Lys Ile
             405   410   415
Gln Lys Met Glu Glu Asn His His Ser Thr Ala Glu Glu Leu Gln Ala
         420   425   430
Thr Leu Gln Glu Leu Ser Asp Gln Gln Gln Met Val Gln Glu Leu Thr
         435   440   445
Ala Glu Asn Glu Lys Leu Val Asp Glu Lys Thr Ile Leu Glu Thr Ser
     450   455   460
Phe His Gln His Arg Glu Arg Ala Glu Gln Leu Ser Gln Glu Asn Glu
465   470   475   480
Lys Leu Met Asn Leu Leu Gln Glu Arg Val Lys Asn Glu Glu Pro Thr
             485   490   495
Thr Gln Glu Gly Lys Ile Ile Glu Leu Glu Gln Lys Cys Thr Gly Ile
             500   505   510
Leu Glu Gln Gly Arg Phe Glu Arg Glu Lys Leu Leu Asn Ile Gln Gln
         515   520   525
Gln Leu Thr Cys Ser Leu Arg Lys Val Glu Glu Glu Asn Gln Gly Ala
     530   535   540
Leu Glu Met Ile Lys Arg Leu Lys Glu Glu Asn Glu Lys Leu Asn Glu
545   550   555   560
Phe Leu Glu Leu Glu Arg His Asn Asn Asn Met Met Ala Lys Thr Leu
             565   570   575
Glu Glu Cys Arg Val Thr Leu Glu Gly Leu Lys Met Glu Asn Gly Ser
         580   585   590

423

Leu Lys Ser His Leu Gln Gly
    595   599

<210> 771
<211> 103
<212>Amino acid
<213> Homo sapiens

<400> 771

```
Ser Gln Met His Arg Leu Ile Phe Val Tyr Thr Leu Ile Cys Ala Asn
1               5                   10                  15
Phe Cys Ser Cys Arg Asp Thr Ser Ala Thr Pro Gln Ser Ala Ser Ile
            20                  25                  30
Lys Ala Leu Arg Asn Ala Asn Leu Arg Arg Asp Glu Ser Asn His Leu
        35                  40                  45
Thr Asp Leu Tyr Arg Arg Asp Glu Thr Ile Gln Val Lys Gly Asn Gly
    50                  55                  60
Tyr Val Gln Ser Pro Arg Phe Pro Asn Ser Tyr Pro Arg Asn Leu Leu
65                  70                  75                  80
Leu Thr Trp Arg Leu His Ser Gln Glu Asn Thr Arg Ile Gln Leu Val
                85                  90                  95
Phe Asp Asn Gln Phe Gly Leu
                100         103
```


<210> 772
<211> 218
<212>Amino acid
<213> Homo sapiens

<400> 772

```
Pro Phe Lys Lys Met Thr Asp Leu Leu Arg Ser Val Val Thr Val Ile
1               5                   10                  15
Asp Val Phe Tyr Lys Tyr Thr Lys Gln Asp Gly Glu Cys Gly Thr Leu
            20                  25                  30
Ser Lys Gly Glu Leu Lys Glu Leu Leu Glu Lys Glu Leu His Pro Val
        35                  40                  45
Leu Lys Asn Pro Asp Asp Pro Asp Thr Val Asp Val Ile Met His Met
    50                  55                  60
Leu Asp Arg Asp His Asp Arg Arg Leu Asp Phe Thr Glu Phe Leu Leu
65                  70                  75                  80
Met Ile Phe Lys Leu Thr Met Ala Cys Asn Lys Val Leu Ser Lys Glu
                85                  90                  95
Tyr Cys Lys Ala Ser Gly Ser Lys Lys His Arg Arg Gly His Arg His
            100                 105                 110
Gln Glu Glu Glu Ser Glu Thr Glu Glu Asp Glu Glu Asp Thr Pro Gly
        115                 120                 125
His Lys Ser Gly Tyr Arg His Ser Ser Trp Ser Glu Gly Glu Glu His
    130                 135                 140
Gly Tyr Ser Ser Gly His Ser Arg Gly Thr Val Lys Cys Arg His Gly
145                 150                 155                 160
Ser Asn Ser Arg Arg Leu Gly Arg Gln Gly Asn Leu Ser Ser Ser Gly
                165                 170                 175
Asn Gln Glu Gly Ser Gln Lys Arg Tyr His Arg Ser Ser Cys Gly His
            180                 185                 190
```

```
Ser Trp Ser Gly Gly Lys Asp Arg His Gly Ser Ser Ser Val Glu Leu
        195                 200                 205
Arg Glu Arg Ile Asn Lys Ser His Ile Lys
    210                 215         218
```

```
<210> 773
<211> 130
<212> Amino acid
<213> Homo sapiens
```

```
<400> 773
Val Pro Lys Ile Ser Gly Pro Asp His Ile Asp Phe Ile Pro Trp Asp
  1             5                 10.                15
Gln Leu Phe Met Ala Ser Ser Ser Val Thr Glu Phe Leu Val Leu
        20                  25                  30
Gly Phe Ser Ser Leu Gly Glu Leu Gln Leu Val Leu Phe Ala Val Phe
        35                  40                  45
Leu Cys Leu Tyr Leu Ile Ile Leu Ser Gly Asn Ile Ile Ile Ile Ser
    50              55                  60
Val Ile His Leu Asp His Ser Leu His Thr Pro Met Tyr Phe Phe Leu
65              70              75                  80
Gly Ile Leu Ser Ile Ser Glu Ile Phe Tyr Thr Thr Val Ile Leu Pro
            85              90                  95
Lys Met Leu Ile Asn Leu Phe Ser Val Phe Arg Thr Leu Ser Phe Val
        100             105             110
Ser Cys Ala Thr Gln Met Phe Tyr Glu Ile Val Gly Pro Gly Thr Gln
        115             120             125
Glu Arg
130
```

```
<210> 774
<211> 204
<212> Amino acid
<213> Homo sapiens
```

```
<220>
<221> misc_feature
<222> (1)...(204)
<223> X = any amino acid or stop code
```

```
<400> 774
Asp His Ser Thr Glu Thr Pro Gly Ile Pro Ala Ala Glu Pro Val Ser
  1             5                 10              15
His Gly Thr Gly Lys Leu Glu Arg Ala Pro Thr Leu Pro Ala Gly Ala
        20                  25                  30
Glu Leu Pro Ala Pro Ala Ala Val Pro Cys Pro Thr Leu Xaa Val Cys
        35                  40                  45
Leu Tyr Pro Gln Leu Leu Gly Leu Ser Val Ala Thr Met Val Thr Leu
    50              55                  60
Thr Tyr Phe Gly Ala His Phe Ala Val Ile Arg Arg Ala Ser Leu Glu
65              70                  75                  80
Lys Asn Pro Tyr Gln Ala Val His Gln Trp Gly Thr Gln Gln Arg Leu
            85              90                  95
Ile Gln His Pro Glu Ser Gly Ser Glu Gly Gln Ser Leu Leu Gly Pro
```

```
                    100                      105                      110
Leu Arg Ala Phe Ser Ala Gly Leu Ser Leu Val Gly Leu Leu Thr Leu
        115                      120                      125
Gly Ala Val Leu Ser Ala Ala Ala Thr Val Arg Glu Ala Gln Gly Leu
    130                      135                      140
Met Ala Gly Gly Phe Leu Cys Phe Ser Leu Ala Phe Cys Ala Gln Val
145                      150                      155                      160
Gln Val Val Phe Trp Arg Leu His Ser Pro Thr Gln Val Glu Asp Ala
                    165                      170                      175
Met Leu Asp Thr Tyr Asp Leu Val Tyr Glu Gln Ala Met Lys Gly Thr
        .180                     185                      190
Ser His Val Arg Arg Gln Glu Leu Ala Ala Ile Gln
        195                      200                      204
```

```
        <210> 775
        <211> 121
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 775
Gln Pro Gly Tyr Ser Glu Tyr Asp Lys Asn Arg Gly Gln Gly Met Leu
1                   5                        10                       15
Leu Asn Met Met Cys Gly Arg Gln Leu Ser Ala Ile Ser Leu Cys Leu
                    20                       25                       30
Ala Val Thr Phe Ala Pro Leu Phe Asn Ala Gln Ala Asp Glu Pro Glu
            35                       40                       45
Val Ile Pro Gly Asp Ser Pro Val Ala Val Ser Glu Gln Gly Glu Ala
    50                       55                       60
Leu Pro Gln Ala Gln Ala Thr Ala Ile Met Ala Gly Ile Gln Pro Leu
65                       70                       75                       80
Pro Glu Gly Ala Ala Glu Lys Ala Arg Thr Gln Ile Glu Ser Gln Leu
                    85                       90                       95
Pro Ala Gly Tyr Lys Pro Val Tyr Leu Asn Gln Leu Gln Leu Leu Tyr
                100                      105                      110
Ala Ala Arg Gly Ile Ser Cys Ser Val
        115                      120 121
```

```
        <210> 776
        <211> 142
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 776
Arg Thr Arg Ala Ala Asp Val Tyr Val Phe Ser Leu Thr Gly Lys Ser
1                   5                        10                       15
Arg Asn Val Ser Ser Ser Thr Val Arg Arg Ser Ala Val Gly Gly Met
                    20                       25                       30
Ser Ala Leu Ala Leu Phe Asp Leu Leu Lys Pro Asn Tyr Ala Leu Ala
            35                       40                       45
Thr Gln Val Glu Phe Thr Asp Pro Glu Ile Val Ala Glu Tyr Ile Thr
    50                       55                       60
Tyr Pro Ser Pro Asn Gly His Gly Glu Val Arg Gly Tyr Leu Val Lys
65                       70                       75                       80
Pro Ala Lys Met Ser Gly Lys Thr Pro Ala Val Val Val Val His Glu
```

426

```
                              85                    90                      95
Asn Arg Gly Leu Asn Pro Tyr Ile Glu Asp Val Ala Arg Arg Val Ala
                  100             105                     110
Lys Ala Gly Tyr Ile Ala Leu Ala Pro Asp Gly Leu Ser Ser Val Gly
                  115             120                     125
Gly Tyr Pro Gly Asn Asp Ile Lys Val Val Ser Ala Ala Ala
    130                     135                 140     142
```

```
        <210> 777
        <211> 150
        <212>Amino acid
        <213> Homo sapiens




        <400> 777
Val Lys Gln Arg His Gly Asn Ser Leu Leu Thr Thr Glu Thr Lys Cys
  1               5                   10                      15
Ile Ser Cys Arg Leu Gly Val Pro Leu Ser Pro Gln Arg Arg Phe Gln
              20                  25                  30
Ala Ile Arg Ile Glu Glu Val Lys Leu Arg Trp Phe Ala Phe Leu Ile
          35                  40                  45
Val Leu Leu Ala Gly Cys Ser Ser Lys His Asp Tyr Thr Asn Pro Pro
      50                  55                  60
Trp Asn Ala Lys Val Pro Val Gln Arg Ala Met Gln Trp Met Pro Ile
  65                  70                  75                  80
Ser Gln Lys Ala Gly Ala Ala Trp Gly Val Asp Pro Gln Leu Ile Thr
              85                  90                  95
Ala Ile Ile Ala Ile Glu Ser Gly Gly Asn Pro Asn Ala Val Ser Lys
          100                 105                 110
Ser Asn Ala Ile Gly Leu Met Gln Leu Lys Ala Ser Thr Ser Gly Arg
          115                 120                 125
Asp Val Tyr Arg Arg Met Gly Trp Ser Gly Glu Pro Thr Thr Ser Glu
    130                 135                 140
Leu Lys Asn Ser Ser Arg
145                 150


        <210> 778
        <211> 296
        <212>Amino acid
        <213> Homo sapiens




        <400> 778
His Ala Ala Gly Ile Arg His Glu Ala Lys Pro Lys Arg Ser Phe Tyr
  1               5                   10                      15
Ala Ala Arg Asp Leu Tyr Lys Tyr Arg His Gln Tyr Pro Asn Phe Lys
              20                  25                  30
Asp Ile Arg Tyr Gln Asn Asp Leu Ser Asn Leu Arg Phe Tyr Lys Asn
          35                  40                  45
Lys Ile Pro Phe Lys Pro Asp Gly Val Tyr Ile Glu Glu Val Leu Ser
      50                  55                  60
Lys Trp Lys Gly Asp Tyr Glu Lys Leu Glu His Asn His Thr Tyr Ile
  65                  70                  75                  80
Gln Trp Leu Phe Pro Leu Arg Glu Gln Gly Leu Asn Phe Tyr Ala Lys
              85                  90                  95
Glu Leu Thr Thr Tyr Glu Ile Glu Glu Phe Lys Lys Thr Lys Glu Ala
```

```
                    100                    105                    110
Ile Arg Arg Phe Leu Leu Ala Tyr Lys Met Met Leu Glu Phe Phe Gly
        115                    120                    125
Ile Lys Leu Thr Asp Lys Thr Gly Asn Val Ala Arg Ala Val Asn Trp
        130                    135                    140
Gln Glu Arg Phe Gln His Leu Asn Glu Ser Gln His Asn Tyr Leu Arg
145                    150                    155                    160
Ile Thr Arg Ile Leu Lys Ser Leu Gly Glu Leu Gly Tyr Glu Ser Phe
                    165                    170                    175
Lys Ser Pro Leu Val Lys Phe Ile Leu His Glu Ala Leu Val Glu Asn
            .180                    185                    190
Thr Ile Pro Asn Ile Lys Gln Ser Ala Leu Glu Tyr Phe Val Tyr Thr
        195                    200                    205
Ile Arg Asp Arg Arg Glu Arg Arg Lys Leu Leu Arg Phe Ala Gln Lys
210                    215                    220
His Tyr Thr Pro Ser Glu Asn Phe Ile Trp Gly Pro Pro Arg Lys Glu
225                    230                    235                    240
Gln Ser Glu Gly Ser Lys Ala Gln Lys Met Ser Ser Pro Leu Ala Ser
                    245                    250                    255
Ser His Asn Ser Gln Thr Ser Met His Lys Lys Ala Lys Asp Ser Lys
                260                    265                    270
Asn Ser Ser Ser Ala Val His Leu Asn Ser Lys Thr Ala Glu Asp Lys
                275                    280                    285
Lys Val Ala Pro Lys Glu Pro Val
290                    295 296
```

```
    <210> 779
    <211> 90
    <212> Amino acid
    <213> Homo sapiens
```

```
    <400> 779
Glu Leu Gln Val Phe Gln Pro Ile Gly Gly Met Ser Asp Ser Gly Ser
1                   5                   10                  15
Gln Leu Gly Ser Met Gly Ser Leu Thr Met Lys Ser Gln Leu Gln Ile
                20                  25                  30
Thr Val Ile Ser Ala Lys Leu Lys Glu Asn Lys Lys Asn Trp Phe Gly
        35                  40                  45
Pro Ser Pro Tyr Val Glu Val Thr Val Asp Gly Gln Ser Lys Lys Thr
    50                  55                  60
Glu Lys Cys Asn Asn Thr Asn Ser Pro Lys Trp Lys Gln Pro Leu Thr
65                  70                  75                  80
Val Ile Val Thr Pro Val Ser Lys Leu His
                85                  90
```

```
    <210> 780
    <211> 88
    <212> Amino acid
    <213> Homo sapiens
```

```
    <400> 780
Ile Glu Thr Leu Ser Phe Val Ile Arg Asn Trp Asn Thr His Ala Met
1                   5                   10                  15
Ser Lys Pro Ile Val Met Glu Arg Gly Val Lys Tyr Arg Asp Ala Asp
```

```
                    20                      25                      30
Lys Met Ala Leu Ile Pro Val Lys Asn Val Ala Thr Glu Arg Glu Ala
          35                      40                      45
Leu Leu Arg Lys Pro Glu Trp Met Lys Ile Lys Leu Pro Ala Asp Ser
      50                      55                      60
Thr Arg Ile Gln Gly Ile Lys Ala Ala Met Arg Lys Asn Gly Leu His
65                      70                      75                      80
Ser Val Cys Glu Glu Ala Ser Cys
                    85          88
```

```
        <210> 781
        <211> 35
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 781
Pro Arg Met Val Leu Gly Lys Pro Gln Thr Asp Pro Thr Leu Glu Trp
1                   5                      10                      15
Phe Leu Ser His Cys His Ile His Lys Tyr Pro Ser Lys Ser Thr Leu
              20                      25                      30
Ile Pro Gln
        35
```

```
        <210> 782
        <211> 145
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 782
Gly Leu Arg Ile Ser Val Gln Glu Arg Ile Lys Ala Cys Phe Thr Glu
1                   5                      10                      15
Ser Ile Gln Thr Gln Ile Ala Ala Ala Glu Ala Leu Pro Asp Ala Ile
              20                      25                      30
Ser Arg Ala Ala Met Thr Leu Val Gln Ser Leu Leu Asn Gly Asn Lys
        35                      40                      45
Ile Leu Cys Cys Gly Asn Gly Thr Ser Ala Ala Asn Ala Gln His Phe
   50                      55                      60
Ala Ala Ser Met Ile Asn Arg Phe Glu Thr Glu Arg Pro Ser Leu Pro
65                      70                      75                      80
Ala Ile Ala Leu Asn Thr Asp Asn Val Val Leu Thr Ala Ile Ala Asn
              85                      90                      95
Asp Arg Leu His Asp Glu Val Tyr Ala Lys Gln Val Arg Ala Leu Gly
              100                     105                     110
His Ala Gly Asp Val Leu Leu Ala Ile Ser Thr Arg Gly Asn Ser Arg
        115                     120                     125
Asp Ile Val Lys Ala Val Glu Ala Ala Val Thr Arg Asp Thr Thr Ile
   130                     135                     140
Val
145
```

```
        <210> 783
        <211> 102
        <212> Amino acid
```

<213> Homo sapiens

<400> 783
Lys Gln Thr Gln His Ala Pro Gly Met Met Lys Lys Tyr Leu Ala Leu
1   5   10   15
Ala Leu Ile Ala Pro Leu Leu Ile Ser Cys Ser Thr Thr Lys Lys Gly
            . 20   25   30
Asp Thr Tyr Asn Glu Ala Trp Val Lys Asp Thr Asn Gly Phe Asp Ile
        35   40   45
Leu Met Gly Gln Phe Ala His Asn Ile Glu Asn Ile Trp Gly Phe Lys
    50   55   60
Glu Val Val Ile Ala Gly Pro Lys Asp Tyr Val Lys Tyr Thr Asp Gln
65   70   75   80
Tyr Gln Thr Arg Ser His Ile Asn Phe Asp Asp Gly Thr Ile Thr Ile
                85   90   95
Glu Pro Ile Pro Gly Thr
            100   102

<210> 784
<211> 78
<212>Amino acid
<213> Homo sapiens

<400> 784
Thr Asp Arg Thr Ala Leu Asn Pro Gly Gln Glu Ser Ala Met Asn Arg
1   5   10   15
Leu Phe Ser Gly Arg Ser Asp Met Pro Phe Ala Leu Leu Leu Leu Ala
            20   25   30
Pro Ser Leu Leu Leu Leu Gly Gly Leu Val Ala Trp Pro Met Val Ser
        35   40   45
Asn Ile Glu Ile Ser Phe Leu Arg Leu Pro Leu Asn Pro Asn Ile Glu
    50   55   60
Ser Thr Phe Val Gly Val Ser Asn Tyr Val Arg Ile Leu Ser
65   70   75   78

<210> 785
<211> 148
<212>Amino acid
<213> Homo sapiens

<400> 785
Lys Glu Leu Val Asp Glu Lys Ser Glu Arg Gly Arg Ala Met Asp Pro
1   5   10   15
Val Ser Gln Leu Ala Ser Ala Gly Thr Phe Arg Val Leu Lys Glu Pro
            20   25   30
Leu Ala Phe Leu Arg Ala Leu Glu Leu Leu Phe Ala Ile Phe Ala Phe
        35   40   45
Ala Thr Cys Gly Gly Tyr Ser Gly Gly Leu Arg Leu Ser Val Asp Cys
    50   55 .   60
Val Asn Lys Thr Glu Ser Asn Leu Ser Ile Asp Ile Ala Phe Ala Tyr

430

```
65                          70                         75                         80
Pro Phe Arg Leu His Gln Val Thr Phe Glu Val Pro Thr Cys Glu Gly
                    85                         90                         95
Lys Glu Arg Gln Lys Leu Ala Leu Ile Gly Asp Ser Ser Ser Ser Ala
                100                        105                        110
Glu Phe Phe Val Thr Val Ala Val Phe Ala Phe Leu Tyr Ser Leu Ala
            115                        120                        125
Ala Thr Gly Arg Tyr Ile Phe Phe His Asn Lys Asn Arg Glu Asn Asn
        130                        135                        140
Arg Gly Pro Leu
145           148
```

```
<210> 786
<211> 246
<212>Amino acid
<213> Homo sapiens
```

```
<400> 786
Leu Gly Thr Val Ser Tyr Gly Ala Asp Thr Met Asp Glu Ile Gln Ser
  1                5                        10                        15
His Val Arg Asp Ser Tyr Ser Gln Met Gln Ser Gln Ala Gly Gly Asn
                20                        25                        30
Asn Thr Gly Ser Thr Pro Leu Arg Lys Ala Gln Ser Ser Ala Pro Lys
            35                        40                        45
Val Arg Lys Ser Val Ser Ser Arg Ile His Glu Ala Val Lys Ala Ile
        50                        55                        60
Val Leu Cys His Asn Val Thr Pro Val Tyr Glu Ser Arg Ala Gly Val
65                        70                        75                        80
Thr Glu Glu Thr Glu Phe Ala Glu Ala Asp Gln Asp Phe Ser Asp Glu
                85                        90                        95
Asn Arg Thr Tyr Gln Ala Ser Ser Pro Asp Glu Val Ala Leu Val Gln
            100                       105                       110
Trp Thr Glu Ser Val Gly Leu Thr Leu Val Ser Arg Asp Leu Thr Ser
        115                       120                       125
Met Gln Leu Lys Thr Pro Ser Gly Gln Val Leu Ser Phe Cys Ile Leu
        130                       135                       140
Gln Leu Phe Pro Phe Thr Ser Glu Ser Lys Arg Met Gly Val Ile Val
145                       150                       155                       160
Arg Asp Glu Ser Thr Ala Glu Ile Thr Phe Tyr Met Lys Gly Ala Asp
                165                       170                       175
Val Ala Met Ser Pro Ile Val Gln Tyr Asn Asp Trp Leu Glu Glu Glu
                180                       185                       190
Cys Gly Asn Met Ala Arg Glu Gly Leu Arg Thr Leu Val Val Ala Lys
        195                       200                       205
Lys Ala Leu Thr Glu Glu Gln Tyr Gln Asp Phe Glu Val Ser Arg Leu
210                       215                       220
Pro Gly Ile Pro Ser Ser Tyr Asp Gly Ala Phe Leu Thr Leu Lys Leu
225                       230                       235                       240
Val Leu Pro Val Phe Val
            245 246
```

```
<210> 787
<211> 176
<212>Amino acid
<213> Homo sapiens
```

```
        <400> 787
Glu Gly Pro His Arg Arg Leu Phe Gln Met Val Lys Ala Leu Gln Glu
1               5                   10                  15
Ala Pro Glu Asp Pro Asn Gln Ile Leu Ile Gly Tyr Ser Arg Gly Leu
            20                  25                  30
Val Val Ile Trp Asp Leu Gln Gly Ser Arg Val Leu Tyr His Phe Leu
        35                  40                  45
Ser Ser Gln Gln Leu Glu Asn Ile Trp Trp Gln Arg Asp Gly Arg Leu
    50                  55                  60
Leu Val Ser Cys His Ser Asp Gly Ser Tyr Cys Gln Trp Pro Val Ser
65                  70                  75                  80
Ser Glu Ala Gln Gln Pro Glu Pro Leu Arg Ser Leu Val Pro Tyr Gly
                85                  90                  95
Pro Phe Pro Cys Lys Ala Ile Thr Arg Ile Leu Trp Leu Thr Thr Arg
            100                 105                 110
Gln Gly Leu Pro Phe Thr Ile Phe Gln Gly Gly Met Pro Arg Ala Ser
        115                 120                 125
Tyr Gly Asp Arg His Cys Ile Ser Val Ile His Asp Gly Gln Gln Thr
    130                 135                 140
Ala Phe Asp Phe Thr Ser Arg Val Ile Gly Phe Thr Val Leu Thr Glu
145                 150                 155                 160
Ala Asp Pro Ala Ala Ser Arg Arg Ala Ser Gly Val Gly Ala Gln Gly
                165                 170                 175 176
```

```
        <210> 788
        <211> 180
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 788
Lys Gln Gly Leu Glu Val Arg Asp Leu His Phe Lys Glu Ile Thr Ser
1               5                   10                  15
Gly Arg Ala Leu Leu Arg Val Ala Cys Lys Arg Pro Ser Met Val Pro
            20                  25                  30
Gly Gly Gln Leu Gln Arg Ala Gly Ala Gly Ala Gln Ala Arg Ile Thr
        35                  40                  45
Gly Leu Ser Pro Ala Leu Trp Gly Ala Arg Val His Gly Trp Ile Pro
    50                  55                  60
Glu Leu Pro Ala Gly Leu Pro Pro Gly Ala Cys Leu Trp Pro Leu Ile
65                  70                  75                  80
Pro Ala Cys Pro Ser Arg His Trp Gly Trp Val Ser Ala Pro Val Lys
                85                  90                  95
Gly Trp Ala Gln Ala Ile Leu Gly Leu Ala Leu Cys Leu Arg Gly Glu
            100                 105                 110
His Arg Gly Leu Gly Ala Gly Val Ser Lys Val Arg Ser Leu Lys Met
        115                 120                 125
Asp Arg Lys Val Trp Thr Glu Thr Leu Ile Glu Val Gly Met Pro Leu
    130                 135                 140
Leu Ala Thr Asp Thr Trp Gly Leu Pro His Ser Thr Ala Val Trp Val
145                 150                 155                 160
Ser Gln Pro Pro Pro Tyr Leu Ser Asp His Ser Thr Leu Glu Leu Glu
                165                 170                 175
Arg Asp Pro Leu
            180
```

<210> 789
<211> 145
<212> Amino acid
<213> Homo sapiens

<400> 789

Leu	Ser	Cys	Asn	Ser	Glu	Gln	Ala	Leu	Leu	Ser	Leu	Val	Pro	Val	Gln
1				5					10					15	
Arg	Glu	Leu	Leu	Arg	Arg	Arg	Tyr	Gln	Ser	Ser	Pro	Ala	Lys	Pro	Asp
		20					25				30				
Ser	Ser	Phe	Tyr	Lys	Gly	Leu	Gly	Thr	Cys	Pro	Ser	Gln	Leu	Arg	Leu
		35				40					45				
Ser	Glu	Pro	Pro	Pro	Thr	Pro	Arg	His	Leu	Ser	Val	Ala	Ser	Val	Ser
	50				55					60					
His	His	Met	Phe	Pro	Ser	His	Arg	Ser	Leu	Cys	Pro	His	Leu	Pro	Asp
65				70					75						80
Phe	Phe	Ala	Ala	Pro	Phe	Pro	Ser	Asp	Asn	Leu	Pro	Tyr	Thr	Leu	Gln
			85					90					95		
Ser	Pro	Phe	Pro	Ser	Pro	Pro	Ala	Thr	Pro	Ser	Asp	His	Ala	Leu	
			100				105					110			
Ile	Leu	His	His	Asp	Leu	Asn	Gly	Gly	Pro	Asp	Asp	Pro	Leu	Gln	Gln
		115				120					125				
Thr	Gly	Gln	Leu	Phe	Gly	Gly	Leu	Val	Arg	Asp	Ile	Arg	Arg	Arg	Tyr
	130					135					140				
Pro															
145															

<210> 790
<211> 65
<212> Amino acid
<213> Homo sapiens

<400> 790

Ser	Pro	Ser	Ser	Lys	Leu	Val	Gly	Met	Trp	Trp	Ala	Gly	Arg	Ala	Gly
1				5					10					15	
Ser	Ser	Arg	Thr	Thr	Ser	Val	Ser	Leu	Leu	Cys	Leu	Pro	Ser	Ala	Pro
			20				25					30			
Phe	Gly	Ala	Ser	Asn	Leu	Leu	Val	Asn	Pro	Leu	Glu	Pro	Gln	Asn	Ala
		35					40					45			
Asp	Lys	Ile	Lys	Ile	Lys	Ile	Ala	Asp	Leu	Gly	Asn	Ala	Cys	Trp	Val
	50					55					60				
Val															
65															

<210> 791
<211> 144
<212> Amino acid
<213> Homo sapiens

<400> 791

Arg	Val	Asp	Pro	Arg	Val	Arg	Ala	Pro	Arg	Cys	Gly	Asp	Lys	Ile	Lys
1				5					10					15	

Asn His Met Tyr Lys Cys Asp Cys Gly Ser Leu Lys Asp Cys Ala Ser
           20   25   30

Asp Arg Cys Cys Glu Thr Ser Cys Thr Leu Ser Leu Gly Ser Val Cys
         35   40   45

Asn Thr Gly Leu Cys Cys His Lys Cys Lys Tyr Ala Ala Pro Gly Val
      50   55   60

Val Cys Arg Asp Leu Gly Gly Ile Cys Asp Leu Pro Glu Tyr Cys Asp
65   70   75   80

Gly Lys Lys Glu Glu Cys Pro Asn Asp Ile Tyr Ile Gln Asp Gly Thr
            85   90   95

Pro Cys Ser Ala Val Ser Val Cys Ile Arg Gly Asn Cys Ser Asp Arg
         100   105   110

Asp Met Gln Cys Gln Ala Leu Phe Gly Tyr Gln Val Lys Asp Gly Ser
         115   120   125

Pro Ala Cys Tyr Arg Lys Leu Asn Arg Ile Gly Asn Arg Phe Gly Thr
130   135   140   144

<210> 792
<211> 242
<212>Amino acid
<213> Homo sapiens

<400> 792

Pro Gly Arg Pro Thr Arg Pro Asp Ala Ser Leu Ala Gln Asp Pro Arg
1   5   10   15

Thr Thr Met Phe Arg Ile Pro Glu Phe Lys Trp Ser Pro Met His Gln
         20   25   30

Arg Leu Leu Thr Asp Leu Leu Phe Ala Leu Glu Thr Asp Val His Val
         35   40   45

Trp Arg Ser His Ser Thr Lys Ser Val Met Asp Phe Val Asn Ser Asn
      50   55   60

Glu Asn Ile Ile Phe Val His Asn Thr Ile His Leu Ile Ser Gln Met
65   70   75   80

Val Asp Asn Ile Ile Ile Ala Cys Gly Gly Ile Leu Pro Leu Leu Ser
               85   90   95

Ala Ala Thr Ser Pro Thr Gly Ser Lys Thr Glu Leu Glu Asn Ile Glu
         100   105   110

Val Thr Gln Gly Met Ser Ala Glu Thr Ala Val Thr Phe Leu Ser Arg
         115   120   125

Leu Met Ala Met Val Asp Val Leu Val Phe Ala Ser Ser Leu Asn Phe
130   135   140

Ser Glu Ile Glu Ala Glu Lys Asn Met Ser Ser Gly Gly Leu Met Arg
145   150   155   160

Gln Cys Leu Lys Leu Val Cys Cys Val Ala Val Arg Asn Cys Leu Glu
         165   170   175

Cys Arg Gln Arg Gln Arg Asp Arg Gly Asn Lys Ser Ser His Gly Ser
         180   185   190

Ser Lys Pro Gln Glu Val Pro Gln Ser Val Thr Ala Thr Ala Ala Ser
         195   200   205

Lys Thr Pro Leu Glu Asn Val Pro Gly Asn Leu Ser Pro Ile Lys Asp
210   215   220

Pro Asp Arg Leu Leu Gln Asp Val Asp Ile Asn Arg Leu Arg Ala Val
225   230   235   240

Val Phe

242

<210> 793
<211> 412
<212>Amino acid
<213> Homo sapiens

<400> 793
Asn Ser Ser Gly Val Lys Leu Leu Gln Ala Leu Gly Leu Ser Pro Gly
1   5   10   15
Asn Gly Lys Asp His Ser Ile Leu His Ser Arg Asn Asp Leu Glu Glu
            20   25   30
Ala Phe Ile His Phe Met Gly Lys Gly Ala Ala Ala Glu Arg Phe Phe
        35   40   45
Ser Asp Lys Glu Thr Phe His Asp Ile Ala Gln Val Ala Ser Glu Phe
    50   55   60
Pro Gly Ala Gln His Tyr Val Gly Gly Asn Ala Ala Leu Ile Gly Gln
65   70   75   80
Lys Phe Ala Ala Asn Ser Asp Leu Lys Val Leu Leu Cys Gly Pro Val
            85   90   95
Gly Pro Lys Leu His Glu Leu Leu Asp Asp Asn Val Phe Val Pro Pro
            100   105   110
Glu Ser Leu Gln Glu Val Asp Glu Phe His Leu Ile Leu Glu Tyr Gln
        115   120   125
Ala Gly Glu Glu Trp Gly Gln Leu Lys Ala Pro His Ala Asn Arg Phe
    130   135   140
Ile Phe Ser His Asp Leu Ser Asn Gly Ala Met Asn Met Leu Glu Val
145   150   155   160
Phe Val Ser Ser Leu Glu Glu Phe Gln Pro Asp Leu Gly Gly Leu Ser
            165   170   175
Gly Leu His Met Met Glu Gly Gln Ser Lys Glu Leu Gln Arg Lys Arg
            180   185   190
Leu Leu Glu Val Val Thr Ser Ile Ser Asp Ile Pro Thr Gly Ile Pro
        195   200   205
Val His Leu Glu Leu Gly Ser Met Thr Asn Arg Glu Leu Met Ser Ser
    210   215   220
Ile Val Leu Gln Gln Val Phe Pro Ala Val Thr Ser Leu Gly Leu Asn
225   230   235   240
Glu Gln Glu Leu Leu Phe Leu Thr Gln Ser Ala Ser Gly Pro His Ser
            245   250   255
Ser Leu Ser Ser Trp Asn Gly Val Pro Asp Val Gly Met Val Ser Asp
            260   265   270
Ile Leu Phe Trp Ile Leu Lys Glu His Gly Arg Ser Lys Ser Arg Ala
            275   280   285
Ser Asp Leu Thr Arg Ile His Phe His Thr Leu Val Tyr His Ile Leu
    290   295   300
Ala Thr Val Asp Gly His Trp Ala Asn Gln Leu Ala Ala Val Ala Ala
305   310   315   320
Gly Ala Arg Val Ala Gly Thr Gln Ala Cys Ala Thr Glu Thr Ile Asp
            325   330   335
Thr Ser Arg Val Ser Leu Arg Ala Pro Gln Glu Phe Met Thr Ser His
            340   345   350
Ser Glu Ala Gly Ser Arg Ile Val Leu Asn Pro Asn Lys Pro Val Val
    355   360   365
Glu Trp His Arg Glu Gly Ile Ser Phe His Phe Thr Pro Val Leu Val
    370   375   380
Cys Lys Asp Pro Ile Arg Thr Val Gly Leu Gly Asp Ala Ile Ser Ala
385   390   395   400
Glu Gly Leu Phe Tyr Ser Glu Val His Pro His Tyr

                        405   410   412

            <210> 794
            <211> 83
            <212>Amino acid
            <213> Homo sapiens

            <400> 794
Asp Asp Ser Ser Gly Trp Gly Leu Glu Gln Leu Val Val Arg Trp Ser
 1   5   10   15
Leu Ala Leu Trp Pro Arg Leu Glu Cys Ser Gly Met Ile Ser Ala His
            20   25   30
Cys Asn Leu Cys Leu Leu Gly Ser Ser Asp Ser Pro Ala Ser Ala Pro
            35   40   45
Arg Val Ala Gly Ile Thr Asp Val Cys His His Ala Trp Leu Val Phe
    50   55   60
Val Phe Leu Val Val Met Gly Phe Pro His Val Gly His Val Gly Leu
65   70   75   80
Glu Leu Leu
            83

            <210> 795
            <211> 391
            <212>Amino acid
            <213> Homo sapiens

            <400> 795
Leu Gly Glu Val Leu Lys Cys Gln Gln Gly Val Ser Ser Leu Ala Phe
 1   5   10   15
Ala Leu Ala Phe Leu Gln Arg Met Asp Met Lys Pro Leu Val Val Leu
            20   25   30
Gly Leu Pro Ala Pro Thr Ala Pro Ser Gly Cys Leu Ser Phe Trp Glu
            35   40   45
Ala Lys Ala Gln Leu Ala Lys Ser Cys Lys Val Leu Val Asp Ala Leu
    50   55   60
Arg His Asn Ala Ala Ala Ala Val Pro Phe Phe Gly Gly Gly Ser Val
65   70   75   80
Leu Arg Ala Ala Glu Pro Ala Pro His Ala Ser Tyr Gly Gly Ile Val
            85   90   95
Ser Val Glu Thr Asp Leu Leu Gln Trp Cys Leu Glu Ser Gly Ser Ile
            100   105   110
Pro Ile Leu Cys Pro Ile Gly Glu Thr Ala Ala Arg Arg Ser Val Leu
            115   120   125
Leu Asp Ser Leu Glu Val Thr Ala Ser Leu Ala Lys Ala Leu Arg Pro
            130   135   140
Thr Lys Ile Ile Phe Leu Asn Asn Thr Gly Gly Leu Arg Asp Ser Ser
145   150   155   160
His Lys Val Leu Ser Asn Val Asn Leu Pro Ala Asp Leu Asp Leu Val
            165   170   175
Cys Asn Ala Glu Trp Val Ser Thr Lys Glu Arg Gln Gln Met Arg Leu
            180   185   190
Ile Val Asp Val Leu Ser Arg Leu Pro His His Ser Ser Ala Val Ile
            195   200   205
Thr Ala Ala Ser Thr Leu Leu Thr Glu Leu Phe Ser Asn Lys Gly Ser

```
            210                    215                    220
Gly Thr Leu Phe Lys Asn Ala Glu Arg Met Leu Arg Val Arg Ser Leu
225                    230                    235                    240
Asp Lys Leu Asp Gln Gly Arg Leu Val Asp Leu Val Asn Ala Ser Phe
                245                    250                    255
Gly Lys Lys Leu Arg Asp Asp Tyr Leu Ala Ser Leu Arg Pro Arg Leu
                260                    265                    270
His Ser Ile Tyr Val Ser Glu Gly Tyr Asn Ala Ala Ala Ile Leu Thr
                275                    280                    285
Met Glu Pro Val Leu Gly Gly Thr Pro Tyr Leu Asp Lys Phe Val Val
                290                    295                    300
Ser Ser Ser Arg Gln Gly Gln Gly Ser Gly Gln Met Leu Trp Glu Cys
305                    310                    315                    320
Leu Arg Arg Asp Leu Gln Thr Leu Phe Trp Arg Ser Arg Val Thr Asn
                325                    330                    335
Pro Ile Asn Pro Trp Tyr Phe Lys His Ser Asp Gly Ser Phe Ser Asn
                340                    .345                   350
Lys Gln Trp Ile Phe Phe Trp Phe Gly Leu Ala Asp Ile Arg Asp Ser
                355                    360                    365 .
Tyr Glu Leu Val Asn His Ala Lys Gly Leu Pro Asp Ser Phe His Lys
                370                    375                    380
Pro Ala Ser Asp Pro Gly Ser
385                    390 391


        <210> 796
        <211> 127
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(127)
        <223> X = any amino acid or stop code




    .  · <400> 796
Tyr His Ala Pro Ala Leu Gln Pro Gly Gln Gln Ser Lys Thr Leu Ser
 1            5                    10                    15
Gln Glu Lys Lys Asn Phe Phe Arg Pro Gly Ala Val Ala His Thr Cys
            20                    25                    30
Asn Pro Ser Thr Leu Gly Gly Arg Gly Gly Arg Ile Thr Arg Ser Gly
            35                    40                    45
Asp Arg Asp His Pro Gly Xaa His Gly Glu Thr Pro Ser Leu Leu Lys
    50                    55                    60
Ile Gln Lys Lys Leu Ala Gly Arg Asp Gly Gly Arg Leu Xaa Ser Gln
 65                    70                    75                    80
Leu Leu Gly Arg Leu Arg Gln Glu Asn Gly Val Asn Pro Gly Gly Gly
                85                    90                    95
Gly Cys Ser Glu Pro Arg Leu Arg His Cys Thr Pro Ala Trp Xaa Gln
            100                   105        ·          110
Ser Glu Thr Ile Ser Arg Lys Lys Arg Lys Lys Glu Arg Lys Tyr
            115                   120                   125 127


        <210> 797
        <211> 159
        <212>Amino acid
        <213> Homo sapiens
```

```
      <400> 797
Phe Arg Pro Ile Gly Ile Ile Arg Gln Ala Leu Cys Ser Ala Asp Gly
1               5                   10                  15
His Gln Arg Arg Ile Leu Thr Leu Arg Leu Gly Leu Leu Val Ile Pro
            20                  25                  30
Phe Leu Pro Ala Ser Asn Leu Phe Phe Arg Val Gly Phe Val Val Pro
        35                  40                  45
Ser Val Gly Cys Cys Val Met Leu Leu Phe Gly Phe Gly Ala Leu Arg
    50                  55                  60
Lys His Thr Glu Lys Lys Lys Leu Ile Ala Ala Val Val Leu Gly Ile
65                  70                  75                  80
Leu Leu Ser Asn Asp Ala Glu Arg Leu Arg Cys Ala Val Arg Gly Gly
                85                  90                  95
Glu Trp Arg Ser Glu Glu Ala Val Phe Arg Gly Ala Val Ser Val Cys
            100                 105                 110
Pro Leu Ser Ala Glu Val Arg Cys Asn Ile Gly Arg Asn Leu Ala Ala
        115                 120                 125
Lys Gly Asn Gln Thr Gly Ala Ile Arg Tyr His Arg Glu Ala Val Ser
130                 135                 140
Leu Asn Pro Lys Thr Lys Ser Ser Thr Arg Glu Phe Arg Pro Cys
145                 150                 155         159
```

```
      <210> 798
      <211> 236
      <212>Amino acid
      <213> Homo sapiens
```

```
      <400> 798
Lys Ile Ala Asp Phe Gly Phe Ser Asn Leu Phe Thr Pro Gly Gln Leu
1               5                   10                  15
Leu Lys Thr Trp Cys Gly Ser Pro Pro Tyr Ala Ala Pro Glu Leu Phe
            20                  25                  30
Glu Gly Lys Glu Tyr Asp Gly Pro Lys Val Asp Ile Trp Ser Leu Gly
            35                  40                  45
Val Val Leu Tyr Val Leu Val Cys Gly Ala Leu Pro Phe Asp Gly Ser
    50                  55                  60
Thr Leu Gln Asn Leu Arg Ala Arg Val Leu Ser Gly Lys Phe Arg Ile
65                  70                  75                  80
Pro Phe Phe Met Ser Thr Glu Cys Glu His Leu Ile Arg His Met Leu
                85                  90                  95
Val Leu Asp Pro Asn Lys Arg Leu Ser Met Glu Gln Ile Cys Lys His
            100                 105                 110
Lys Trp Met Lys Leu Gly Asp Ala Asp Pro Asn Phe Asp Arg Leu Ile
    115                 120                 125
Ala Glu Cys Gln Gln Leu Lys Glu Glu Arg Gln Val Asp Pro Leu Asn
    130                 135                 140
Glu Asp Val Leu Leu Ala Met Glu Asp Met Gly Leu Asp Lys Glu Gln
145                 150                 155                 160
Thr Leu Gln Ser Leu Arg Ser Asp Ala Tyr Asp His Tyr Ser Ala Ile
            165                 170                 175
Tyr Ser Leu Leu Cys Asp Arg His Lys Arg His Lys Thr Leu Arg Leu
            180                 185                 190
Gly Ala Leu Pro Ser Met Pro Arg Ala Leu Gly Leu Ser Ser Thr Ser
    195                 200                 205
Gln Tyr Pro Ala Glu Gln Ala Gly Thr Ala Met Asn Ile Ser Val Pro
210                 215                 220
```

438

```
Gln Val Gln Leu Ile Asn Pro Glu Asn Gln Ile Val
225                 230                 235 236
```

```
        <210> 799
        <211> 114
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(114)
        <223> X = any amino acid or stop code
```

```
        <400> 799
Ala Arg Glu Phe Leu Gly His Arg Ala Ser Ile Thr Trp Ser Xaa Ala
1               5                   10                  15
Arg Val His His Arg Phe Pro Lys Ala Glu Val Ala Xaa Pro Ser Leu
            20                  25                  30
Leu Arg Thr Asp Leu Thr Glu Asp Arg Thr Lys Cys Cys His Gly Asp
        35                  40                  45
Leu Leu Glu Cys Ala Asp Asp Arg Ala Asp Leu Val Glu Asp Ile Trp
    50                  55                  60
Glu Asn Gln Asp Ser Ile Ser Thr Ile Leu Ile Glu Cys Cys Glu Lys
65                  70                  75                  80
Pro Leu Leu Glu Lys Ser His Cys Ile Ala Glu Val Glu Asn Asp Glu
                85                  90                  95
Met Pro Ala Asp Leu Pro Ser Leu Ala Ala Asp Phe Val Glu Ser Lys
            100                 105                 110
Asp Val
    114
```

```
        <210> 800
        <211> 328
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(328)
        <223> X = any amino acid or stop code
```

```
        <400> 800
Val Pro Pro Lys Met Lys Arg Gly Thr Ser Leu His Ser Arg Arg Gly
1               5                   10                  15
Lys Pro Glu Ala Pro Lys Gly Ser Pro Gln Ile Asn Arg Lys Ser Gly
            20                  25                  30
Gln Glu Met Thr Ala Val Met Gln Ser Gly Arg Pro Arg Ser Ser Ser
        35                  40                  45
Thr Thr Asp Ala Pro Thr Gly Ser Ala Met Met Glu Ile Ala Cys Ala
    50                  55                  60
Ala Ala Ala Ala Ala Ala Ala Cys Leu Pro Gly Glu Glu Gly Thr Ala
65                  70                  75                  80
Glu Arg Ile Glu Arg Leu Glu Val Ser Ser Leu Ala Gln Thr Ser Ser
                85                  90                  95
```

439

```
Ala Val Ala Ser Ser Thr Asp Gly Ser Ile His Thr Asp Ser Val Asp
            100                 105                 110
Gly Thr Pro Asp Pro Gln Arg Thr Lys Ala Ala Ile Ala His Leu Gln
        115                 120                 125
Gln Lys Ile Leu Lys Leu Thr Glu Gln Ile Lys Ile Ala Gln Thr Ala
    130                 135                 140
Arg Arg Asn Arg Arg Pro Gly Ser Xaa Lys Asp Cys Thr Pro Xaa Lys
145                 150                 155                 160
Cys Leu Arg Lys Ser Asp Glu Ala Leu Asn Arg Val Leu Gln Gln Ile
            165                 170                 175
Arg Val Pro Pro Lys Met Lys Arg Gly Thr Ser Leu His Ser Arg Arg
        180                 185                 190
Gly Lys Pro Glu Ala Pro Lys Gly Ser Pro Gln Ile Asn Arg Lys Ser
        195                 200                 205
Gly Gln Glu Met Thr Ala Val Met Gln Ser Gly Arg Pro Arg Ser Ser
    210                 215                 220
Ser Thr Thr Asp Ala Pro Thr Gly Ser Ala Met Met Glu Ile Ala Cys
225                 230                 235                 240
Ala Ala Ala Ala Ala Ala Ala Ala Cys Leu Pro Gly Glu Glu Gly Thr
            245                 250                 255
Ala Glu Arg Ile Glu Arg Leu Glu Val Ser Ser Leu Ala Gln Thr Ser
            260                 265                 270
Ser Ala Val Ala Ser Ser Thr Asp Gly Ser Ile His Thr Asp Ser Val
        275                 280                 285
Asp Gly Thr Pro Asp Pro Gln Arg Thr Lys Ala Ala Ile Ala His Leu
    290                 295                 300
Gln Gln Lys Ile Leu Lys Leu Thr Glu Gln Ile Lys Ile Ala Gln Thr
305                 310                 315                 320
Ala Arg Arg Asn Arg Arg Pro Gly
            325                 328


    <210> 801
    <211> 356
    <212> Amino acid
    <213> Homo sapiens




    <400> 801
Met Gln Thr Ile Glu Arg Leu Val Lys Glu Arg Asp Asp Leu Met Ser
1               5                   10                  15
Ala Leu Val Ser Val Arg Ser Ser Leu Ala Asp Thr Gln Gln Arg Glu
            20                  25                  30
Ala Ser Ala Tyr Glu Gln Val Lys Gln Val Leu Gln Ile Ser Glu Glu
        35                  40                  45
Ala Asn Phe Glu Lys Thr Lys Ala Leu Ile Gln Cys Asp Gln Leu Arg
    50                  55                  60
Lys Glu Leu Glu Arg Gln Ala Glu Arg Leu Glu Lys Glu Leu Ala Ser
65                  70                  75                  80
Gln Gln Glu Lys Arg Ala Ile Glu Lys Asp Met Met Lys Lys Glu Ile
            85                  90                  95
Thr Lys Glu Arg Glu Tyr Met Gly Ser Lys Met Leu Ile Leu Ser Gln
        100                 105                 110
Asn Ile Ala Gln Leu Glu Ala Gln Val Glu Lys Val Thr Lys Glu Lys
    115                 120                 125
Ile Ser Ala Ile Asn Gln Leu Glu Glu Ile Gln Ser Gln Leu Ala Ser
    130                 135                 140
Arg Glu Met Asp Val Thr Lys Val Cys Gly Glu Met Arg Tyr Gln Leu
145                 150                 155                 160
Asn Lys Thr Asn Met Glu Lys Asp Glu Ala Glu Lys Glu His Arg Glu
            165                 170                 175
```

440

```
Phe Arg Ala Lys Thr Asn Arg Asp Leu Glu Ile Lys Asp Gln Glu Ile
            180                     185                 190
Glu Lys Leu Arg Ile Glu Leu Asp Glu Ser Lys Gln His Leu Glu Gln
        195                     200                 205
Glu Gln Gln Lys Ala Ala Leu Ala Arg Glu Glu Cys Leu Arg Leu Thr
    210                     215                 220
Glu Leu Leu Gly Glu Ser Glu His Gln Leu His Leu Thr Arg Gln Glu
225                     230                 235                 240
Lys Asp Ser Ile Gln Gln Ser Phe Ser Lys Glu Ala Lys Ala Gln Ala
                245                 250                 255
Leu Gln Ala Gln Gln Arg Glu Gln Glu Leu Thr Gln Lys Ile Gln Gln
            260                 265                 270
Met Glu Ala Gln His Asp Lys Thr Glu Asn Glu Gln Tyr Leu Leu Leu
    275                 280                 285
Thr Ser Gln Asn Thr Phe Leu Thr Lys Leu Lys Glu Glu Cys Cys Thr
290                 295                 300
Leu Ala Lys Lys Leu Glu Gln Ile Ser Gln Lys Thr Arg Ser Glu Ile
305                 310                     315                 320
Ala Gln Leu Ser Gln Glu Lys Arg Tyr Thr Tyr Asp Lys Leu Gly Lys
            325                 330                 335
Leu Gln Arg Arg Asn Glu Glu Leu Glu Glu Gln Cys Val Gln His Gly
        340                 345                 350
Arg Ser Thr *
    355
```

```
<210> 802
<211> 210
<212>Amino acid
<213> Homo sapiens
```

```
<400> 802
Ser Tyr Pro Val Trp Trp Asn Ser Pro Leu Thr Ala Glu Val Pro Pro
1               5               10                  15
Glu Leu Leu Ala Ala Ala Gly Phe Phe His Thr Gly His Gln Asp Lys
            20              25                  30
Val Arg Cys Phe Phe Cys Tyr Gly Gly Leu Gln Ser Trp Lys Arg Gly
        35              40                  45
Asp Asp Pro Trp Thr Glu His Ala Lys Trp Phe Pro Ser Cys Gln Phe
    50              55                  60
Leu Leu Arg Ser Lys Gly Arg Asp Phe Val His Ser Val Gln Glu Thr
65              70                  75                  80
His Ser Gln Leu Leu Gly Ser Trp Asp Pro Trp Glu Glu Pro Glu Asp
            85                  90                  95
Ala Ala Pro Val Ala Pro Ser Val Pro Ala Ser Gly Tyr Pro Glu Leu
            100                 105                 110
Pro Thr Pro Arg Arg Glu Val Gln Ser Glu Ser Ala Gln Glu Pro Gly
    115                 120                 125
Gly Val Ser Pro Ala Glu Ala Gln Arg Ala Trp Trp Val Leu Glu Pro
    130                 135                 140
Pro Gly Ala Arg Asp Val Glu Ala Gln Leu Arg Arg Leu Gln Glu Glu
145                 150                 155                 160
Arg Thr Cys Lys Val Cys Leu Asp Arg Ala Val Ser Ile Val Phe Val
                165                 170                 175
Pro Cys Gly His Leu Val Cys Ala Glu Cys Ala Pro Gly Leu Gln Leu
            180                 185                 190
Cys Pro Ile Cys Arg Ser Pro Cys Gly Pro Leu Arg Pro Cys Leu Trp
        195                 200                 205
Val Pro
    210
```

<210> 803
<211> 130
<212>Amino acid
<213> Homo sapiens

<400> 803

```
Met Cys Ser Tyr Arg Glu Lys Lys Ala Glu Pro Gln Glu Leu Leu Gln
1               5                   10                  15
Leu Asp Gly Tyr Thr Val Asp Tyr Thr Asp Pro Gln Pro Gly Leu Glu
            20                  25                  30
Gly Gly Arg Ala Phe Phe Asn Ala Val Lys Glu Gly Asp Thr Val Ile
            35                  40                  45
Phe Ala Ser Asp Asp Glu Gln Asp Arg Ile Leu Trp Val Gln Ala Met
        50                  55                  60
Tyr Arg Ala Thr Gly Gln Ser His Lys Pro Val Pro Pro Thr Gln Val
65                  70                  75                  80
Gln Lys Leu Asn Ala Lys Gly Gly Asn Val Pro Gln Leu Asp Ala Pro
                85                  90                  95
Ile Ser Gln Phe Tyr Ala Asp Arg Ala Gln Lys His Gly Met Asp Glu
                100                 105                 110
Phe Ile Ser Ser Asn Pro Cys Asn Phe Asp His Ala Ser Leu Phe Glu
            115                 120                 125
Met *
129
```


<210> 804
<211> 458
<212>Amino acid
<213> Homo sapiens

<400> 804

```
Lys Gln Leu Ile Val Leu Gly Asn Lys Val Asp Leu Leu Pro Gln Asp
1               5                   10                  15
Ala Pro Gly Tyr Arg Gln Arg Leu Arg Glu Arg Leu Trp Glu Asp Cys
            20                  25                  30
Ala Arg Ala Gly Leu Leu Leu Ala Pro Gly His Gln Gly Pro Gln Arg
            35                  40                  45
Pro Val Lys Asp Glu Pro Gln Asp Gly Glu Asn Pro Asn Pro Pro Asn
        50                  55                  60
Trp Ser Arg Thr Val Val Arg Asp Val Arg Leu Ile Ser Ala Lys Thr
65                  70                  75                  80
Gly Tyr Gly Val Glu Glu Leu Ile Ser Ala Leu Gln Arg Ser Trp Arg
                85                  90                  95
Tyr Arg Gly Asp Val Tyr Leu Val Gly Ala Thr Asn Ala Gly Lys Ser
                100                 105                 110
Thr Leu Phe Asn Thr Leu Leu Glu Ser Asp Tyr Cys Thr Ala Lys Gly
            115                 120                 125
Ser Glu Ala Ile Asp Arg Ala Thr Ile Ser Pro Trp Pro Gly Thr Thr
130                 135                 140
Leu Asn Leu Leu Lys Phe Pro Ile Cys Asn Pro Thr Pro Tyr Arg Met
145                 150                 155                 160
Phe Lys Arg His Gln Arg Leu Lys Lys Asp Ser Thr Gln Ala Glu Glu
                165                 170                 175
```

```
Asp Leu Ser Glu Gln Glu Gln Asn Gln Leu Asn Val Leu Lys Lys His
             180                 185                 190
Gly Tyr Val Val Gly Arg Val Gly Arg Thr Phe Leu Tyr Ser Glu Glu
         195                 200                 205
Gln Lys Asp Asn Ile Pro Phe Glu Phe Asp Ala Asp Ser Leu Ala Phe
    210                 215                     220
Asp Met Glu Asn Asp Pro Val Met Gly Thr His Lys Ser Thr Lys Gln
225                 230                 235                     240
Val Glu Leu Thr Ala Gln Asp Val Lys Asp Ala His Trp Phe Tyr Asp
             245                 250                 255
Thr Pro Gly Ile Thr Lys Glu Asn Cys Ile Leu Asn Leu Leu Thr Glu
             260                 265                 270
Lys Glu Val Asn Ile Val Leu Pro Thr Gln Ser Ile Val Pro Arg Thr
         275                 280                 285
Phe Val Leu Lys Pro Gly Met Val Leu Phe Leu Gly Ala Ile Gly Arg
         290                 295                 300
Ile Asp Phe Leu Gln Gly Asn Gln Ser Ala Trp Phe Thr Val Val Ala
305                 310                 315                     320
Ser Asn Ile Leu Pro Val His Ile Thr Ser Leu Asp Arg Ala Asp Ala
             325                 330                 335
Leu Tyr Gln Lys His Ala Gly His Thr Leu Leu Gln Ile Pro Met Gly
             340                 345                 350
Gly Lys Glu Arg Met Ala Gly Phe Pro Pro Leu Val Ala Glu Asp Ile
         355                 360                 365
Met Leu Lys Glu Gly Leu Gly Ala Ser Glu Ala Val Ala Asp Ile Lys
    370                 375                 380
Phe Ser Ser Ala Gly Trp Val Ser Val Thr Pro Asn Phe Lys Asp Arg
385                 390                 395                     400
Leu His Leu Arg Gly Tyr Thr Pro Glu Gly Thr Val Leu Thr Val Arg
             405                 410                 415
Pro Pro Leu Leu Pro Tyr Ile Val Asn Ile Lys Gly Gln Arg Ile Lys
             420                 425                 430
Lys Ser Val Ala Tyr Lys Thr Lys Lys Pro Pro Ser Leu Met Tyr Asn
             435                 440                 445
Val Arg Lys Lys Lys Gly Lys Ile Asn Val
    450                 455         458
```

```
<210> 805
<211> 290
<212> Amino acid
<213> Homo sapiens
```

```
<400> 805
Ser Thr Val Ala Ser Met Met His Arg Gln Glu Thr Val Glu Cys Leu
1               5               10                  15
Arg Lys Phe Asn Ala Arg Arg Lys Leu Lys Gly Ala Ile Leu Thr Thr
            20              25                  30
Met Leu Val Ser Arg Asn Phe Ser Ala Ala Lys Ser Leu Leu Asn Lys
        35              40              45
Lys Ser Asp Gly Gly Val Lys Pro Gln Ser Asn Asn Lys Asn Ser Leu
    50              55              60
Val Ser Pro Ala Gln Glu Pro Ala Pro Leu Gln Thr Ala Met Glu Pro
65              70              75                  80
Gln Thr Thr Val Val His Asn Ala Thr Asp Gly Ile Lys Gly Ser Thr
            85              90                  95
Glu Ser Cys Asn Thr Thr Thr Glu Asp Glu Asp Leu Lys Ala Ala Pro
            100             105                 110
Leu Arg Thr Gly Asn Gly Ser Ser Val Pro Glu Gly Arg Ser Ser Arg
    115             120                 125
```

```
Asp Arg Thr Ala Pro Ser Ala Gly Met Gln Pro Gln Pro Ser Leu Cys
    130             135             140
Ser Ser Ala Met Arg Lys Gln Glu Ile Ile Lys Ile Thr Glu Gln Leu
145             150             155             160
Ile Glu Ala Ile Asn Asn Gly Asp Phe Glu Ala Tyr Thr Lys Ile Cys
            165             170             175
Asp Pro Gly Leu Thr Ser Phe Glu Pro Glu Ala Leu Gly Asn Leu Val
            180             185             190
Glu Gly Met Asp Phe His Lys Phe Tyr Phe Glu Asn Leu Leu Ser Lys
        195             200             205
Asn Ser Lys Pro Ile His Thr Thr Ile Leu Asn Pro His Val His Val
    210             215             220
Ile Gly Glu Asp Ala Ala Cys Ile Ala Tyr Ile Arg Leu Thr Gln Tyr
225             230             235             240
Ile Asp Gly Gln Gly Arg Pro Ser Asn Pro Ala Lys Ser Glu Glu Thr
            245             250             255
Arg Val Trp His Arg Arg Asp Gly Lys Trp Leu Asn Val His Tyr His
            260             265             270
Cys Ser Gly Ala Pro Cys Pro His Arg Cys Ser Glu Leu Ser His Arg
    275             280             285
Gly Phe
290
```

```
<210> 806
<211> 570
<212> Amino acid
<213> Homo sapiens
```

```
<400> 806
Leu Pro Lys Asn Val Val Phe Val Leu Asp Ser Ser Ala Ser Met Val
1               5               10              15
Gly Thr Lys Leu Arg Gln Thr Lys Asp Ala Leu Phe Thr Ile Leu His
            20              25              30
Asp Leu Arg Pro Gln Asp Arg Phe Ser Ile Ile Gly Phe Ser Asn Arg
        35              40              45
Ile Lys Val Trp Lys Asp His Leu Ile Ser Val Thr Pro Asp Ser Ile
    50              55              60
Arg Asp Gly Lys Val Tyr Ile His His Met Ser Pro Thr Gly Gly Thr
65              70              75              80
Asp Ile Asn Gly Ala Leu Gln Arg Ala Ile Arg Leu Leu Asn Lys Tyr
            85              90              95
Val Ala His Ser Gly Ile Gly Asp Arg Arg Val Ser Leu Ile Val Phe
            100             105             110
Leu Thr Asp Gly Lys Pro Thr Val Gly Glu Thr His Thr Leu Lys Ile
    115             120             125
Leu Asn Asn Thr Arg Glu Ala Ala Arg Gly Gln Val Cys Ile Phe Thr
    130             135             140
Ile Gly Ile Gly Asn Asp Val Asp Phe Arg Leu Leu Glu Lys Leu Ser
145             150             155             160
Leu Glu Asn Cys Gly Leu Thr Arg Arg Val His Glu Glu Glu Asp Ala
            165             170             175
Gly Ser Gln Leu Ile Gly Phe Tyr Asp Glu Ile Arg Thr Pro Leu Leu
        180             185             190
Ser Asp Ile Arg Ile Asp Tyr Pro Pro Ser Ser Val Val Gln Ala Thr
    195             200             205
Lys Thr Leu Phe Pro Asn Tyr Phe Asn Gly Ser Glu Ile Ile Ile Ala
    210             215             220
Gly Lys Leu Val Asp Arg Lys Leu Asp His Leu His Val Glu Val Thr
225             230             235             240
```

```
Ala Ser Asn Ser Lys Lys Phe Ile Ile Leu Lys Thr Asp Val Pro Val
              245              250                    255
Arg Pro Gln Lys Ala Gly Lys Asp Val Thr Gly Ser Pro Arg Pro Gly
          260              265                270
Gly Asp Gly Glu Gly Asp Thr Asn His Ile Glu Arg Leu Trp Ser Tyr
    275              280                    285
Leu Thr Thr Lys Glu Leu Leu Ser Ser Trp Leu Gln Ser Asp Asp Glu
    290              295                300
Pro Glu Lys Glu Arg Leu Arg Gln Arg Ala Gln Ala Leu Ala Val Ser
305              310                    315                    320
Tyr Arg Phe Leu Thr Pro Phe Thr Ser Met Lys Leu Arg Gly Pro Val
              325              330                    335
Pro Arg Met Asp Gly Leu Glu Glu Ala His Gly Met Ser Ala Ala Met
          340              345                350
Gly Pro Glu Pro Val Val Gln Ser Val Arg Gly Ala Gly Thr Gln Pro
    355              360                    365
Gly Pro Leu Leu Lys Lys Pro Tyr Gln Pro Arg Ile Lys Ile Ser Lys
    370              375                    380
Thr Ser Val Asp Gly Asp Pro His Phe Val Val Asp Phe Pro Leu Ser
385              390                    395                    400
Arg Leu Thr Val Cys Phe Asn Ile Asp Gly Gln Pro Gly Asp Ile Leu
              405              410                    415
Arg Leu Val Ser Asp His Arg Asp Ser Gly Val Thr Val Asn Gly Glu
              420              425                    430
Leu Ile Gly Ala Pro Ala Pro Pro Asn Gly His Lys Lys Gln Arg Thr
    435              440                    445
Tyr Leu Arg Thr Ile Thr Ile Leu Ile Asn Lys Pro Glu Arg Ser Tyr
    450              455                460
Leu Glu Ile Thr Pro Ser Arg Val Ile Leu Asp Gly Gly Asp Arg Leu
465              470                    475                    480
Val Leu Pro Cys Asn Gln Ser Val Val Val Gly Ser Trp Gly Leu Glu
              485              490                    495
Val Ser Val Ser Ala Asn Ala Asn Val Thr Val Thr Ile Gln Gly Ser
              500              505                    510
Ile Ala Phe Val Ile Leu Ile His Leu Tyr Lys Lys Pro Ala Pro Phe
    515              520                    525
Gln Arg His His Leu Gly Phe Tyr Ile Ala Asn Ser Glu Gly Leu Ser
    530              535                540
Ser Asn Cys Arg Val Phe Cys Glu Ser Gly Ile Leu Ile Gln Glu Leu
545              550                    555                    560
Thr Gln Gln Ser Val Ala Val Ala Gly Arg
              565              570
```

```
<210> 807
<211> 279
<212> Amino acid
<213> Homo sapiens
```

```
<400> 807
Phe Phe Leu Glu Gln Val Ser Gln Tyr Thr Phe Ala Met Cys Ser Tyr
1                5                10                    15
Arg Glu Lys Lys Ser Glu Pro Gln Glu Leu Met Gln Leu Glu Gly Tyr
              20              25                30
Thr Val Asp Tyr Thr Asp Pro His Pro Gly Leu Gln Gly Gly Cys Met
          35              40                    45
Phe Phe Asn Ala Val Lys Glu Gly Asp Thr Val Ile Phe Ala Ser Asp
    50              55                    60
Asp Glu Gln Asp Arg Ile Leu Trp Val Gln Ala Met Tyr Arg Ala Thr
65              70                    75                    80
```

```
Gly Gln Ser Tyr Lys Pro Val Pro Ala Ile Gln Thr Gln Lys Leu Asn
                85                      90                      95
Pro Lys Gly Gly Thr Leu His Ala Asp Ala Gln Leu Tyr Ala Asp Arg
            100                     105                 110
Phe Gln Lys His Gly Met Asp Glu Phe Ile Ser Ala Asn Pro Cys Lys
        115                     120                 125
Leu Asp His Ala Phe Leu Phe Arg Ile Leu Gln Arg Gln Thr Leu Asp
    130                     135                 140
His Arg Leu Asn Asp Ser Tyr Ser Cys Leu Gly Trp Phe Ser Pro Gly
145                     150                 155                 160
Gln Val Phe Val Leu Asp Glu Tyr Cys Ala Arg Tyr Gly Val Arg Gly
                165                 170                 175
Cys His Arg His Leu Cys Tyr Leu Ala Glu Leu Met Glu His Ser Glu
            180                 185                 190
Asn Gly Ala Val Ile Asp Pro Thr Leu Leu His Tyr Ser Phe Ala Phe
        195                 200                 205
Cys Ala Ser His Val His Gly Asn Arg Pro Asp Gly Ile Gly Thr Val
    210                     215                 220
Ser Val Glu Glu Lys Glu Arg Phe Glu Glu Ile Lys Glu Arg Leu Ser
225                     230                 235                 240
Ser Leu Leu Glu Asn Gln Ile Ser His Phe Arg Tyr Cys Phe Pro Phe
                245                 250                 255
Gly Arg Pro Glu Gly Ala Leu Lys Ala Thr Leu Ser Leu Leu Glu Arg
            260                 265                 270
Val Leu Met Lys Asp Ile Ala
            275         279
```

```
<210> 808
<211> 251
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(251)
<223> X = any amino acid or stop code
```

```
<400> 808
Asp Gly Leu Leu His Glu Val Leu Asn Gly Leu Leu Asp Arg Pro Asp
1               5                   10                  15
Trp Glu Glu Ala Val Lys Met Pro Val Gly Ile Leu Pro Cys Gly Ser
                20                  25                  30
Gly Asn Ala Leu Ala Gly Ala Val Asn Gln His Gly Gly Phe Glu Pro
        35                  40                  45
Ala Leu Gly Leu Asp Leu Leu Leu Asn Cys Ser Leu Leu Leu Cys Arg
    50                  55                  60
Gly Gly Gly His Pro Leu Asp Leu Leu Ser Val Thr Leu Ala Ser Gly
65                  70                  75                  80
Ser Arg Cys Phe Ser Phe Leu Ser Val Ala Trp Gly Phe Val Ser Asp
                85                  90                  95
Val Asp Ile Gln Ser Glu Arg Phe Arg Ala Leu Gly Ser Ala Arg Phe
            100                 105                 110
Thr Leu Gly Thr Val Leu Gly Leu Ala Thr Leu His Thr Tyr Arg Gly
        115                 120                 125
Arg Leu Ser Tyr Leu Pro Ala Thr Val Glu Pro Ala Ser Pro Thr Pro
    130                 135                 140
Ala His Ser Leu Pro Arg Ala Lys Ser Glu Leu Thr Leu Thr Pro Asp
145                 150                 155                 160
Pro Ala Pro Pro Met Ala His Ser Pro Leu His Arg Ser Val Ser Asp
```

```
                    165                      170                      175
Leu Pro Leu Pro Leu Pro Gln Pro Ala Leu Ala Ser Pro Gly Ser Pro
                180                      185                      190
Glu Pro Leu Pro Ile Leu Ser Leu Asn Gly Gly Gly Pro Glu Leu Ala
            195                      200                      205
Gly Asp Trp Gly Gly Ala Gly Asp Ala Pro Leu Ser Pro Asp Pro Gln
    210                      215                      220
Leu Ser Ser Pro Pro Gly Ser Pro Lys Ala Ala Leu His Ser Pro Val
225                      230                      235                      240
Xaa Lys Lys Ala Pro Val Ile Pro Pro Asp Met
                    245                      250 251
```

```
        <210> 809
        <211> 174
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 809
Lys Gly Val Pro Thr Leu Leu Met Ala Ala Gly Ser Phe Tyr Asp Ile
1                   5                       10                      15
Leu Ala Ile Thr Gly Phe Asn Thr Cys Leu Gly Ile Ala Phe Ser Thr
                20                      25                      30
Gly Ser Thr Val Phe Asn Val Leu Arg Gly Val Leu Glu Val Val Ile
            35                      40                      45
Gly Val Ala Thr Gly Ser Val Leu Gly Phe Phe Ile Gln Tyr Phe Pro
    50                      55                      60
Ser Arg Asp Gln Asp Lys Leu Val Cys Lys Arg Thr Phe Leu Val Leu
65                      70                      75                      80
Gly Leu Ser Val Leu Ala Val Phe Ser Ser Val His Phe Gly Phe Pro
                85                      90                      95
Gly Ser Gly Gly Leu Cys Thr Leu Val Met Ala Phe Leu Ala Gly Met
            100                     105                     110
Gly Trp Thr Ser Glu Lys Ala Glu Val Glu Lys Ile Ile Ala Val Ala
            115                     120                     125
Trp Asp Ile Phe Gln Pro Leu Leu Phe Gly Leu Ile Gly Ala Glu Val
    130                     135                     140
Ser Ile Ser Ser Leu Arg Pro Glu Thr Val Gly Leu Cys Val Ala Thr
145                     150                     155                     160
Val Gly Ile Ala Val Leu Ile Arg Ile Phe Asp Tyr Ile Phe
                165                     170                     174
```

```
        <210> 810
        <211> 104
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 810
Leu Leu Lys Glu Val Val Val Gln Ala Ser Pro Val Cys Lys Thr Cys
  1                 5                       10                      15
Cys Ser Gln Leu Val Arg Thr Pro Val Thr Phe Thr Glu Val Gln Asn
                20                      25                      30
Val Cys Arg Cys Ser Ala Gly Tyr Leu Ile Ser Val Cys Ser Tyr Thr
            35                      40                      45
Ser Ser Asp His Asn Gln Cys Tyr Ala Gly Thr Ala Ser Leu Ala Leu
```

```
           50                      55                      60
Leu Trp Ile Gly Gly Ile Leu Lys Gly Cys Leu Leu Trp Lys Gln Phe
 65                      70                      75                      80
Arg Trp Thr Glu Arg Ser His Trp Asn Phe Gly Tyr Trp Ala Leu Trp
                85                      90                      95
Ser Pro Gly Asn Gly Asn Gly Cys
                100                     104
```

```
        <210> 811
        <211> 77
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 811
Ile Cys Thr Ser Thr Tyr Leu Gln Ile Phe Pro Gly Lys Pro Ser Cys
 1                       5                       10                      15
Phe Met Cys Lys Gly Arg Leu Met Cys Ile Tyr Phe Ile Leu Trp Tyr
                20                      25                      30
Leu Gly His Tyr Thr Ser Leu His Trp Asn Trp Cys Arg Tyr Ile Ser
                35                      40                      45
Asp Pro Asn Val Asp Ala Cys Pro Asp Pro Arg Asn Ala Glu Val Ser
        50                      55                      60
Met Thr His Thr Val Pro Ala Leu Met Glu Leu Ile Asp
 65                      70                      75      77
```

```
        <210> 812
        <211> 194
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 812
Leu Glu Ser Leu Pro Gly Phe Lys Glu Ile Val Ser Arg Gly Val Lys
 1                   5                       10                      15
Val Asp Tyr Leu Thr Pro Asp Phe Pro Ser Leu Ser Tyr Pro Asn Tyr
                20                      25                      30
Tyr Thr Leu Met Thr Gly Arg His Cys Glu Val His Gln Met Ile Gly
                35                      40                      45
Asn Tyr Met Trp Asp Pro Thr Thr Asn Lys Ser Phe Asp Ile Gly Val
        50                      55                      60
Asn Lys Asp Ser Leu Met Pro Leu Trp Trp Asn Gly Ser Glu Pro Leu
 65                      70                      75                      80
Trp Val Thr Leu Thr Lys Ala Lys Arg Lys Val Tyr Met Tyr Tyr Trp
                85                      90                      95
Pro Gly Cys Glu Val Glu Ile Leu Gly Val Arg Pro Thr Tyr Cys Leu
                100                     105                     110
Glu Tyr Lys Asn Val Pro Thr Asp Ile Asn Phe Ala Asn Ala Val Ser
        115                     120                     125
Asp Ala Leu Asp Ser Phe Lys Ser Gly Arg Ala Asp Leu Ala Ala Ile
        130                     135                     140
Tyr His Glu Arg Ile Asp Val Glu Gly His His Tyr Gly Pro Ala Ser
145                     150                     155                     160
Pro Gln Arg Lys Asp Ala Leu Lys Ala Val Asp Thr Val Leu Lys Tyr
                165                     170                     175
Met Thr Lys Trp Ile Gln Glu Arg Gly Leu Gln Asp Arg Leu Asn Val
```

```
                    180                  185                  190
   Ile Ile
       194


           <210> 813
           <211> 116
           <212>Amino acid
           <213> Homo sapiens

           <220>  .
           <221> misc_feature
           <222> (1)...(116)
           <223> X = any amino acid or stop code




           <400> 813
Ala Arg Asp Phe His Pro Lys Gln Thr Leu Asp Phe Leu Arg Ser Asp
 1               5                  10                  15
Met Ala Asn Ser Lys Ile Thr Glu Glu Val Lys Arg Ser Ile Ala Gln
            20                  25                  30
Gln Tyr Leu Asp Leu Thr Val Ala Leu Glu Gln Val Asp Pro Asp Ala
        35                  40                  45
Glu Val Asp Ala Ala Pro Ser Thr Thr Ser Ser Cys Gly His Xaa Asp
    50                  55                  60
Ser His Ala Gly Ser Xaa Arg Val Leu Ser Leu Leu Gly Asp Xaa Gly
65                  70                  75                  80
Pro Ala Xaa Thr Gly Ala Asn Ser Met Ala Gly Lys Leu Leu Leu Val
                85                  90                  95
Ala Trp Leu Gly Phe Pro Asp Pro Phe Trp Gly Lys Glu Leu Ser Asp
            100                 105                 110
Pro Ala Phe Lys
        115 116



           <210> 814
           <211> 121
           <212>Amino acid
           <213> Homo sapiens

           <220>
           <221> misc_feature
           <222> (1)...(121)
           <223> X = any amino acid or stop code




           <400> 814
Lys Gln Ser Gly Asp Val Thr Cys Asn Cys Thr Asp Gly Arg Leu Ala
 1               5                  10                  15
Pro Ser Cys Leu Thr Cys Val Gly His Cys Ile Phe Gly Gly Tyr Cys
            20                  25                  30
Thr Met Asn Ser Lys Met Met Pro Glu Cys Gln Ser Pro Pro His Met
        35                  40                  45
Thr Gly Pro Arg Cys Glu Glu His Val Phe Ser Gln His Gln Pro Gly
    50                  55                  60
His Ile Thr Ser Ile Leu Ile Pro Met Leu Xaa Leu Leu Leu Leu Val
65                  70                  75                  80
Leu Val Ala Gly Val Ile Phe Cys His Lys Arg Arg Val Gln Gly Ala
```

```
                              85                    90                        95
 Lys Gly Phe Gln His Gln Arg Met Thr Asn Gly Ala Met Asn Ala Gln
                          100                   105               110
 Ile Ala Asn Pro Thr Tyr Lys Met Tyr
             115                   120 121
```

```
        <210> 815
        <211> 86
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(86)
        <223> X = any amino acid or stop code
```

```
        <400> 815
 Thr Val Glu Asn Ala Gly Arg Trp Leu Xaa Glu Glu Ala Glu Ile Gln
 .1                  5                  10                  15
 Ala Glu Leu Glu Arg Leu Glu Arg Val Arg Asn Leu His Ile Arg Glu
              20                  25                  30
 Leu Lys Arg Ile Asn Asn Glu Asp Asn Ser Gln Phe Lys Asp His Pro
          35                  40                  45
 Thr Leu Asn Glu Arg Tyr Leu Leu Leu His Leu Leu Gly Arg Gly Gly
      50                  55                  60
 Phe Ser Glu Val Tyr Lys Val Met Tyr Gly Leu Phe Trp Phe Phe Tyr
 65                  70                  75                  80
 Thr Asn Val Ala Arg Ile
                  85  86
```

```
        <210> 816
        <211> 130
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(130)
        <223> X = any amino acid or stop code
```

```
        <400> 816
 Met Cys Glu Glu Phe Leu Val Met Gly Lys Gly Cys Ser Cys Val Phe
 1                  5                  10                  15
 Xaa Ile Leu Leu Ser Asn Pro Gln Met Trp Trp Leu Asn Asp Ser Asn
              20                  25                  30
 Pro Glu Thr Asp Asn Arg Gln Glu Ser Pro Ser Gln Glu Asn Ile Asp
          35                  40                  45
 Arg Val Ser Asp Met Ala Phe Val Pro Ser Ala Trp Thr Ala Ser Gly
      50                  55                  60
 Gly Val Ala Trp Gly Asn Leu Gly Glu Ser Gly Ser Arg Thr Gly Gly
 65                  70                  75                  80
 Val Arg Ala Glu Thr Leu Ala Pro Arg Leu Gln Val Xaa Pro Ala His
                  85                  90                  95
 Leu Arg Gly His Pro Arg Ser Asn Arg Gly Gln Gly Arg Pro Pro Trp
```

```
                      100                   105                    110
        Lys Ala Gly Lys Leu Gly Lys Cys Gln Glu Val Leu Phe Arg Phe Ala
                  115                 120                 125
        Ala Phe
         130


            <210> 817
            <211> 119
            <212>Amino acid
            <213> Homo sapiens

            <220>
            <221> misc_feature
            <222> (1)...(119)
            <223> X = any amino acid or stop code



            <400> 817
        Phe Arg Ala Met Phe Leu Ala Val Gln His Asp Cys Arg Pro Met Asp
         1               5                   10                  15
        Lys Ser Ala Gly Ser Gly His Lys Ser Glu Glu Lys Arg Glu Lys Met
                  20                  25                  30
        Lys Arg Thr Leu Leu Lys Asp Trp Lys Thr Arg Leu Ser Tyr Phe Leu
                  35                  40                  45
        Gln Asn Ser Ser Thr Pro Gly Lys Pro Lys Thr Gly Lys Lys Ser Lys
                  50                  55                  60
        Gln Gln Ala Phe Ile Lys Xaa Val Glu Asn Pro Glu Leu Ala Asn Ile
         65                  70                  75                  80
        Asn Ser Xaa Leu Leu Asn Xaa Lys Gly Glu Leu Xaa Xaa Ala Xaa Ala
                      85                  90                  95
        Asn Ile Gln Asn Leu Ser Cys Arg Pro Ser Pro Glu Glu Ala Gln Leu
                  100                 105                 110
        Trp Ser Glu Ala Phe Asp Glu
                  115                 119


            <210> 818
            <211> 131
            <212>Amino acid
            <213> Homo sapiens

            <220>
            <221> misc_feature
            <222> (1)...(131)
            <223> X = any amino acid or stop code



            <400> 818
        Gly Phe Phe Asn Phe Ser Ser Pro Lys Leu Lys Gly Trp Lys Ile Asn
         1               5                   10                  15
        Ser Ser Leu Val Leu Glu Ile Arg Lys Asn Ile Leu Arg Phe Leu Asp
                  20                  25                  30
        Ala Glu Arg Asp Val Ser Val Val Lys Ser Ser Phe Pro Ser Lys Asp
                  35                  40                  45
        Ala Arg His Ser Ser Val His Arg Xaa Phe Thr Gln Leu His Trp Gly
                  50                  55                  60
        Pro Pro Ser His Thr Pro Ala Arg Pro Xaa Arg Gly Phe Phe Asn Phe
```

451

```
      65                    70                    75                    80
Ser Ser Pro Lys Leu Lys Gly Trp Lys Ile Asn Ser Ser Leu Val Leu
                      85                    90                    95
Glu Ile Arg Lys Asn Ile Leu Arg Phe Leu Asp Ala Glu Arg Asp Val
            100                   105                   110
Ser Val Val Lys Ser Ser Phe Pro Ser Lys Asp Ala Arg His Ser Ser
            115                   120                   125
Val His Arg
130 131
```

```
    <210> 819
    <211> 85
    <212>Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(85)
    <223> X = any amino acid or stop code
```

```
    <400> 819
Arg Ile Asp Asp Gln Gln Glu Leu Lys Arg Val Thr Xaa Tyr Ser Gln
 1                   5                   10                    15
Lys Glu Tyr Thr Lys Lys Lys Leu His Lys Lys Cys Asn Ile Ile Gln
            20                    25                    30
Ala Asp Ile Lys Pro Asp Asn Ile Leu Asp Asn Glu Ser Ile Thr Ile
            35                    40                    45
Leu Lys Leu Ser Asp Phe Gly Ser Ala Ser His Val Ala Asp Asn Asp
      50                    55                    60
Ile Thr Pro Ser Ser Ser Gln Thr Thr Ser Ala Ala Ser Ser Pro Pro
65                    70                    75                    80
Arg Thr Leu Arg Arg
                  85
```

```
    <210> 820
    <211> 44
    <212>Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(44)
    <223> X = any amino acid or stop code
```

```
    <400> 820
Ser Ser Lys Pro Trp Asp Xaa Ser Leu Ala Pro Lys His Ser Gly Xaa
 1                   5                   10                    15
Thr Lys Asn Met Asp Cys Tyr Cys Ile Ile Pro Thr Cys Ile Gly Arg
            20                    25                    30
Glu Arg Cys Tyr Gly Thr Cys Ile Gly Asp Thr Val
            35                    40              44
```

```
    <210> 821
```

452

```
        <211> 105
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(105)
        <223> X = any amino acid or stop code




        <400> 821
Asn Ser Ser Lys Lys Leu Val Met Glu His Gln Trp Lys Lys Tyr Leu
1               5                   10                  15
Arg Arg Asn Tyr Gln Arg Met Leu Asn Arg Leu Ile Thr Leu Ile Gly
            20                  25                  30
Ser Cys Gly Val Leu Xaa Leu Ile Ser Thr Ile Pro Thr Ser Arg Leu
        35                  40                  45
Lys Phe Leu Lys Glu Thr Gly His Gly Thr Pro Met Glu Glu Ile Pro
    50                  55                  60
Glu Glu Glu Leu Ser Glu Asp Val Glu Gln Ile Asp His Ala Asp Arg
65                  70                  75                  80
Glu Leu Arg Arg Gly Gln Asn Leu Arg Cys Lys Gly Ile His Arg Leu
            85                  90                  95
Pro Thr His Ile Gln Val Gly Gln Asn
            100                 105




        <210> 822
        <211> 172
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(172)
        <223> X = any amino acid or stop code




        <400> 822
Lys Trp Met Leu Leu His Ser Phe Lys Ile Phe Cys Leu Ser Leu Tyr
1               5                   10                  15
Pro Gln Leu Xaa Cys Pro Phe Glu Phe Phe Ser His Ser Ala Thr Ile
            20                  25                  30
Phe His Glu Leu Val Tyr Lys Gln Thr Lys Ile Ile Ser Ser Asn Gln
        35                  40                  45
Glu Leu Ile Tyr Glu Gly Arg Arg Leu Val Leu Glu Pro Gly Arg Leu
    50                  55                  60
Ala Gln His Phe Pro Lys Thr Thr Glu Glu Asn Pro Ile Phe Val Val
65                  70                  75                  80
Ser Arg Glu Pro Leu Asn Thr Ile Gly Leu Ile Tyr Glu Lys Ile Ser
            85                  90                  95
Leu Pro Lys Val His Pro Arg Tyr Asp Leu Asp Gly Asp Ala Ser Met
            100                 105                 110
Ala Lys Ala Ile Thr Gly Val Val Cys Tyr Ala Cys Arg Ile Ala Ser
            115                 120                 125
Thr Leu Leu Leu Tyr Gln Glu Leu Met Arg Lys Gly Ile Arg Trp Leu
        130                 135                 140
Ile Glu Leu Ile Lys Asp Asp Tyr Asn Glu Thr Val His Lys Lys Thr
```

453

```
145                    150                  155              160
Glu Val Val Ile Thr Leu Gly Phe Leu Val Ser Arg
                   165                  170    172
```

```
        <210> 823
        <211> 104
        <212> Amino acid
        <213> Homo sapiens

        <220>  .
        <221> misc_feature
        <222> (1)...(104)
        <223> X = any amino acid or stop code
```

```
        <400> 823
Gly Thr Arg Lys Met Gly Pro Thr Val Ser Pro Ile Cys Leu Pro Gly
  1               5                  10                  15
Thr Trp Gly Asp Tyr Asn Leu Met Asp Gly Asp Leu Gly Leu Ile Ser
             20                  25                  30
Gly Trp Gly Arg Thr Glu Lys Arg Asp Arg Ala Asp Arg Leu Lys Ala
         35                  40                  45
Gly Arg Ser Pro Ala Ala Gly Xaa Arg Lys Trp Glu Pro Gly Arg Gly
     50                  55                  60
Asp Pro Thr Trp Glu Glu Ser Glu Glu Asp Val His Lys Ser Lys Trp
 65                  70                  75                  80
Thr Arg Cys Val Asp Glu Lys Gly Ala Xaa Cys Xaa Thr Asp Asn Lys
                 85                  90                  95
Arg Pro Leu Arg Cys Gly Val Thr
             100                 104
```

```
        <210> 824
        <211> 99
        <212> Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(99)
        <223> X = any amino acid or stop code
```

```
        <400> 824
His Glu Leu Glu Asn Leu Ile Lys Ser Ala His Ser Tyr Ser Leu Tyr
  1               5                  10                  15
Xaa Gly Xaa Tyr Leu His Gly Ala Xaa Thr Ala Glu Pro Glu Ala Ser
             20                  25                  30
Phe Cys Pro Arg Arg Gly Trp Asn Arg Gln Ala Gly Ala Ala Gly Ser
         35                  40                  45
Arg Met Asn Phe Arg Pro Gly Val Leu Ser Ser Arg Gln Leu Gly Leu
     50                  55                  60
Pro Gly Pro Pro Asp Gly Pro Asp Tyr Thr Val Tyr Tyr Pro Phe His
 65                  70                  75                  80
Arg Leu Ala Met Val Thr Ala Ala Ser Arg Leu Glu Arg Glu His Leu
                 85                  90                  95
Thr His Leu
```

99

<210> 825
<211> 111
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(111)
<223> X = any amino acid or stop code

<400> 825
```
Pro Val Pro Leu Pro His Pro Ile Leu Glu Val Cys Pro Gly Gln Xaa
1               5                   10                  15
Glu Pro Gln Ser Ala Ile Ser Leu Thr Ala Phe Gln Val Gln Ala Gly
            20                  25                  30
Ala Ser Arg Ala Ser Pro Gly Pro Pro Ala Pro Ser Ser Ser Lys Pro
        35                  40                  45
Gly Arg Lys Ala Lys Val Ala Ser Pro Cys Pro Asp Arg Pro Ala Pro
    50                  55                  60
Pro Pro Thr Xaa Pro Arg Pro Ala Ala Ala Pro Gly Ser Glu Ser Ser
65                  70                   75                  80
Pro Arg Pro Pro Arg Pro Arg Thr Gly Arg Arg Gln Gln Arg Ala His
                85                  90                  95
Ala Arg Arg Ala Ala Ala Arg Thr Ala Pro Trp Arg Pro Ser Cys
            100                 105                 110 111
```


<210> 826
<211> 95
<212>Amino acid
<213> Homo sapiens

<400> 826
```
His Glu Gly Arg Arg Arg Gly Trp Ala Ser Ala Ser Gln Arg Phe Leu
1               5                   10                  15
Arg Asn Trp Ala Phe Leu Thr Pro Ser Lys Val Arg Arg Leu Lys Gly
            20                  25                  30
Gln Lys Ala Phe Gly Lys Leu Pro Ser His Ser Asp Thr Ser Leu Thr
        35                  40                  45
Ser Asp Leu Gly Phe His His Arg Phe Asn Pro Asn Ala Ser Ser Ser
    50                  55                  60
Phe Lys Pro Ser Gly Thr Lys Phe Ala Ile Gln Tyr Gly Thr Gly Arg
65                  70                   75                  80
Val Asp Gly Ile Leu Ser Glu Asp Lys Leu Thr Val Ser Gly Leu
                85                  90                  95
```


<210> 827
<211> 33
<212>Amino acid
<213> Homo sapiens

<220>

```
        <221> misc_feature
        <222> (1)...(33)
        <223> X = any amino acid or stop code
```

```
        <400> 827
Gly Arg Asn Ile Met His Tyr Pro Asn Gly His Ala Ile Cys Ile Ala
1               5                   10                  15
Asn Gly His Cys Ile Ile Leu Xaa Asn Ser His Asn Ile Lys Val Trp
            20                  25                  30
Val
33
```

```
        <210> 828
        <211> 178
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(178)
        <223> X = any amino acid or stop code
```

```
        <400> 828
Ile Asn Leu Gly Asn Thr Cys Tyr Met Asn Ser Val Ile Xaa Ala Leu
1               5                   10                  15
Phe Met Ala Thr Asp Phe Arg Arg Gln Val Leu Ser Leu Asn Leu Asn
            20                  25                  30
Gly Cys Asn Ser Leu Met Lys Lys Leu Gln His Leu Phe Ala Phe Leu
            35                  40                  45
Ala His Thr Gln Arg Glu Ala Tyr Ala Pro Arg Ile Phe Phe Glu Ala
    50                  55                  60
Ser Arg Pro Pro Trp Phe Thr Pro Arg Ser Gln Gln Asp Cys Ser Glu
65                  70                  75                  80
Tyr Leu Arg Phe Leu Leu Asp Arg Leu His Glu Glu Lys Ile Leu
            85                  90                  95
Lys Val Gln Ala Ser His Lys Pro Ser Glu Ile Leu Glu Cys Ser Glu
            100                 105                 110
Thr Ser Leu Gln Glu Val Ala Ser Lys Ala Ala Val Leu Thr Glu Thr
            115                 120                 125
Pro Arg Thr Ser Asp Gly Glu Lys Thr Leu Ile Glu Lys Met Phe Gly
            130                 135                 140
Gly Lys Leu Arg Thr His Ile Arg Cys Leu Asn Cys Thr Ser Thr Ser
145                 150                 155                 160
Gln Lys Val Glu Ala Phe Thr Asp Leu Ser Leu Ala Phe Trp Pro Ser
            165                 170                 175
Ser Ser
178
```

```
        <210> 829
        <211> 43
        <212>Amino acid
        <213> Homo sapiens

        <220>
```

```
<221> misc_feature
<222> (1)...(43)
<223> X = any amino acid or stop code
```

```
<400> 829
Ala Arg Asp Asp Pro Arg Val Arg Leu Ser Leu Ser Pro Asn Phe Phe
1               5                   10                  15
Xaa Leu Ala Ser Lys Leu Gly Lys Gln Trp Thr Pro Leu Ile Ile Leu
            20                  25                  30
Ala Asn Ser Leu Ser Gly Thr Asn Met Gly Glu
        35                  40          43
```

```
<210> 830
<211> 259
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(259)
<223> X = any amino acid or stop code
```

```
<400> 830
Met His Arg Ile Lys Leu Asn Asp Arg Met Thr Phe Pro Glu Glu Leu
1               5                   10                  15
Asp Met Ser Thr Phe Ile Asp Val Glu Asp Glu Lys Ser Pro Gln Thr
            20                  25                  30
Glu Ser Cys Thr Asp Ser Gly Ala Glu Asn Glu Gly Ser Cys His Ser
            35                  40                  45
Asp Gln Met Ser Asn Asp Phe Ser Asn Asp Asp Gly Val Asp Glu Gly
    50                  55                  60
Ile Cys Leu Glu Thr Asn Ser Gly Thr Glu Lys Ile Ser Lys Ser Gly
65                  70                  75                  80
Leu Glu Lys Asn Ser Leu Ile Tyr Glu Leu Phe Ser Val Met Val His
                85                  90                  95
Ser Gly Ser Ala Ala Gly Gly His Tyr Tyr Ala Cys Ile Lys Ser Phe
            100                 105                 110
Ser Asp Glu Gln Trp Tyr Ser Phe Asn Asp Gln His Val Ser Arg Ile
    115                 120                 125
Thr Gln Glu Asp Ile Lys Lys Thr His Gly Gly Ser Ser Gly Ser Arg
    130                 135                 140
Gly Tyr Tyr Ser Ser Ala Phe Ala Ser Ser Thr Asn Ala Tyr Met Leu
145                 150                 155                 160
Ile Tyr Arg Leu Lys Asp Pro Ala Arg Asn Ala Lys Phe Leu Glu Val
            165                 170                 175
Asp Glu Tyr Pro Glu His Ile Lys Asn Leu Val Gln Lys Glu Arg Glu
            180                 185                 190
Leu Glu Glu Gln Glu Lys Arg Gln Arg Glu Ile Glu Arg Asn Thr Cys
        195                 200                 205
Lys Ile Lys Leu Phe Cys Leu His Pro Thr Lys Gln Val Met Met Glu
    210                 215                 220
Asp Xaa Ile Glu Val His Lys Asp Lys Thr Leu Lys Glu Ala Val Glu
225                 230                 235                 240
Met Ala Tyr Lys Met Met Asp Leu Glu Glu Val Ile Pro Leu Asp Cys
            245                 250                 255
```

Cys Arg Leu
        259

        <210> 831
        <211> 200
        <212>Amino acid
        <213> Homo sapiens

        <400> 831
Ser Val Met Pro Val Pro Ala Leu Cys Leu Leu Trp Ala Leu Ala Met
1   5   10   15
Val Thr Arg Pro Ala Ser Ala Ala Pro Met Gly Gly Pro Glu Leu Ala
            20   25   30
Gln His Glu Glu Leu Thr Leu Leu Phe His Gly Thr Leu Gln Leu Gly
        35   40   45
Gln Ala Leu Asn Gly Val Tyr Arg Thr Thr Glu Gly Arg Leu Thr Lys
    50   55   60
Ala Arg Asn Ser Leu Gly Leu Tyr Gly Arg Thr Ile Glu Leu Leu Gly
65   70   75   80
Gln Glu Val Ser Arg Gly Arg Asp Ala Ala Gln Glu Leu Arg Ala Ser
                85   90   95
Leu Leu Glu Thr Gln Met Glu Glu Asp Ile Leu Gln Leu Gln Ala Glu
            100   105   110
Ala Thr Ala Glu Val Leu Gly Glu Val Ala Gln Ala Gln Lys Val Leu
        115   120   125
Arg Asp Ser Val Gln Arg Leu Glu Val Gln Leu Arg Ser Ala Trp Leu
    130   135   140
Gly Pro Ala Tyr Arg Glu Phe Glu Val Leu Lys Ala His Ala Asp Lys
145   150   155   160
Gln Ser His Ile Leu Trp Ala Leu Thr Gly His Val Gln Arg Gln Arg
                165   170   175
Arg Glu Met Val Ala Gln Gln His Arg Leu Arg Gln Ile Gln Glu Arg
            180   185   190
Leu His Thr Ala Ala Leu Pro Ala
        195   200

        <210> 832
        <211> 225
        <212>Amino acid
        <213> Homo sapiens

        <400> 832
Ile Thr Ser Val Asp Pro Arg Val Arg Gly Asn Ala Ser Thr Gly Tyr
1   5   10   15
Gly Lys Ile Trp Leu Asp Asp Val Ser Cys Asp Gly Asp Glu Ser Asp
            20   25   30
Leu Trp Ser Cys Arg Asn Ser Gly Trp Gly Asn Asn Asp Cys Ser His
        35   40   45
Ser Glu Asp Val Gly Val Ile Cys Ser Asp Ala Ser Asp Met Glu Leu
    50   55   60
Arg Leu Val Gly Gly Ser Arg Cys Ala Gly Lys Val Glu Val Asn
65   70   75   80
Val Gln Gly Ala Val Gly Ile Leu Cys Ala Asn Gly Trp Gly Met Asn
                85   90   95

458

```
Ile Ala Glu Val Val Cys Arg Gln Leu Glu Cys Gly Ser Ala Ile Arg
            100                 105                 110
Val Ser Arg Glu Pro His Phe Thr Glu Arg Thr Leu His Ile Leu Met
        115                 120                 125
Ser Asn Ser Gly Cys Ala Gly Gly Glu Ala Ser Leu Trp Asp Cys Ile
    130                 135                 140
Arg Trp Glu Trp Lys Gln Thr Ala Cys His Leu Asn Met Glu Ala Ser
145                 150                 155                 160
Leu Ile Cys Ser Ala His Arg Gln Pro Arg Leu Val Gly Ala Asp Met
            165                 170                 175
Pro Cys Ser Gly Arg Val Glu Val Lys His Ala His Thr Trp Arg Ser
        180                 185                 190
Val Cys Asp Ser Asp Phe Ser Leu His Ala Ala Asn Val Leu Cys Arg
        195                 200                 205
Glu Leu Asn Cys Gly Asp Ala Ile Ser Leu Ser Val Gly Asp His Phe
    210                 215                 220
Gly
225
```

```
<210> 833
<211> 206
<212>Amino acid
<213> Homo sapiens
```

```
<400> 833
Ser Asn Tyr Pro Ser Ser Arg Phe Arg Val Ala Gly Ile Thr Gly Val
1                 5                 10                  15
Lys Leu Gly Met Arg Ser Ile Pro Ile Ala Thr Ala Cys Thr Ile Tyr
            20                  25                  30
His Lys Phe Phe Cys Glu Thr Asn Leu Asp Ala Tyr Asp Pro Tyr Leu
        35                  40                  45
Ile Ala Met Ser Ser Ile Tyr Leu Ala Gly Lys Val Glu Glu Gln His
    50                  55                  60
Leu Arg Thr Arg Asp Ile Ile Asn Val Ser Asn Arg Tyr Phe Asn Pro
65                  70                  75                  80
Ser Gly Glu Pro Leu Glu Leu Asp Ser Arg Phe Trp Glu Leu Arg Asp
            85                  90                  95
Ser Ile Val Gln Cys Glu Leu Leu Met Leu Arg Val Leu Arg Phe Gln
            100                 105                 110
Val Ser Phe Gln His Pro His Lys Tyr Leu Leu His Tyr Leu Val Ser
        115                 120                 125
Leu Gln Asn Trp Leu Asn Arg His Ser Trp Gln Arg Thr Pro Val Ala
    130                 135                 140
Val Thr Ala Trp Ala Leu Leu Arg Asp Ser Tyr His Gly Ala Leu Cys
145                 150                 155                 160
Leu Arg Phe Gln Ala Gln His Ile Ala Val Ala Val Leu Tyr Leu Ala
            165                 170                 175
Leu Gln Val Tyr Gly Val Glu Val Pro Ala Glu Val Glu Ala Asp Glu
        180                 185                 190
Ala Val Gly Trp Gln Ile Tyr Ala Met Asp Thr Glu Ile Pro
    195                 200                 205 206
```

```
<210> 834
<211> 86
<212>Amino acid
<213> Homo sapiens
```

```
        <400> 834
Arg Gly Ser Arg His Ala Val His Gly Trp Ala Phe Gly Leu Leu Phe
 1           5                  10                  15
Ile Asn Lys Glu Ser Val Val Met Ala Tyr Leu Phe Thr Thr Phe Asn
             20                  25                  30
Ala Phe Gln Gly Val Phe Ile Phe Val Phe His Cys Ala Leu Gln Lys
             35                  40                  45
Lys Val Arg Ser Arg Arg Gly Pro Gly Ser Gln Pro Pro Leu Glu Thr
    50              55                  60
Phe Pro Gly Tyr Pro Gly Glu Gly Gly Glu Gly Gly Gly Asp Ser Gly
65              70                  75                  80
Ala Pro Ser Ser Pro Gln
                85  86
```

```
        <210> 835
        <211> 110
        <212> Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(110)
        <223> X = any amino acid or stop code
```

```
        <400> 835
Ala Arg Lys Asp Asp Leu Pro Pro Asn Met Arg Phe His Glu Glu Lys
 1           5                  10                  15
Arg Leu Asp Phe Glu Trp Thr Leu Lys Ala Gly Xaa Glu Lys Gly Xaa
             20                  25                  30
Pro Ser Lys Xaa Asn Lys Gly Trp Glu Gly Gln Glu Xaa Xaa Xaa Thr
             35                  40                  45
Val Arg Asp Xaa Gly Ile Ser Xaa Xaa Val Lys Pro Gln His Leu Ser
    50              55                  60
Xaa Ala Leu Gln Met Ala Leu Lys Arg Val Tyr Thr Leu Leu Ser Ser
65              70                  75                  80
Trp Asn Cys Leu Glu Asp Phe Asp Gln Ile Phe Trp Gly Gln Lys Ser
             85                  90                  95
Ala Leu Ala Gly Gln Trp Phe Pro Glu Val Ser Ile Ile Pro
             100                 105                 110
```

```
        <210> 836
        <211> 70
        <212> Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(70)
        <223> X = any amino acid or stop code
```

```
        <400> 836
```

460

```
Gly Lys Gln Gln Arg Glu Thr Leu Arg Arg Pro Ser Pro Thr Ile Ser
1               5                   10                  15
Val Gln Arg Ala Gly Ser Pro Glu His Ser Ser Ala Ser His Xaa His
            20                  25                  30
Ser Pro Cys Pro Ala Pro Gly Gln Arg Val Leu Pro Thr Ala Leu Cys
            35                  40                  45
Thr Leu Met Thr Ser Lys His Phe His Gly Cys Pro Leu Ala Gly Gln
    50                  55                  60
Gly Arg Ala Val Thr Leu
65                  70


        <210> 837
        <211> 473
        <212> Amino acid
        <213> Homo sapiens



        <400> 837
Gly Val Cys Gly Leu Pro Arg Phe Cys Gly Ser Ile Ile Leu Cys His
1               5                   10                  15
Tyr Glu Met Ser Ser Leu Gly Ala Ser Phe Val Gln Ile Lys Phe Asp
            20                  25                  30
Asp Leu Gln Phe Phe Glu Asn Cys Gly Gly Gly Ser Phe Gly Ser Val
            35                  40                  45
Tyr Arg Ala Lys Trp Ile Ser Gln Asp Lys Glu Val Ala Val Lys Lys
    50                  55                  60
Leu Leu Lys Ile Glu Lys Glu Ala Glu Ile Leu Ser Val Leu Ser His
65                  70                  75                  80
Arg Asn Ile Ile Gln Phe Tyr Gly Val Ile Leu Glu Pro Pro Asn Tyr
                85                  90  ,                 95
Gly Ile Val Thr Glu Tyr Ala Ser Leu Gly Ser Leu Tyr Asp Tyr Ile
            100                 105                 110
Asn Ser Asn Arg Ser Glu Glu Met Asp Met Asp His Ile Met Thr Trp
    115                 120                 125
Ala Thr Asp Val Ala Lys Gly Met His Tyr Leu His Met Glu Ala Pro
130                 135                 140
Val Lys Val Ile His Arg Asp Leu Lys Ser Arg Asn Val Val Ile Ala
145                 150                 155                 160
Ala Asp Gly Val Leu Lys Ile Cys Asp Phe Gly Ala Ser Arg Phe His
                165                 170                 175
Asn His Thr Thr His Met Ser Leu Val Gly Thr Phe Pro Trp Met Ala
            180                 185                 190
Pro Glu Val Ile Gln Ser Leu Pro Val Ser Glu Thr Cys Asp Thr Tyr
            195                 200                 205
Ser Tyr Gly Val Val Leu Trp Glu Met Leu Thr Arg Glu Val Pro Phe
    210                 215                 220
Lys Gly Leu Glu Gly Leu Gln Val Ala Trp Leu Val Val Glu Lys Asn
225                 230                 235                 240
Glu Arg Leu Thr Ile Pro Ser Ser Cys Pro Arg Ser Phe Ala Glu Leu
                245                 250                 255
Leu His Gln Cys Trp Glu Ala Asp Ala Lys Lys Arg Pro Ser Phe Lys
            260                 265                 270
Gln Ile Ile Ser Ile Leu Glu Ser Met Ser Asn Asp Thr Ser Leu Pro
    275                 280                 285
Asp Lys Cys Asn Ser Phe Leu His Asn Lys Ala Glu Trp Arg Cys Glu
    290                 295                 300
Ile Glu Ala Thr Leu Glu Arg Leu Lys Lys Leu Glu Arg Asp Leu Ser
305                 310                 315                 320
Phe Lys Glu Gln Glu Leu Lys Glu Arg Glu Arg Arg Leu Lys Met Trp
                325                 330                 335
```

461

```
Glu Gln Lys Leu Thr Glu Gln Ser Asn Thr Pro Leu Leu Leu Pro Leu
        340                 345             350
Ala Ala Arg Met Ser Glu Glu Ser Tyr Phe Glu Ser Lys Thr Glu Glu
        355                 360             365
Ser Asn Ser Ala Glu Met Ser Cys Gln Ile Thr Ala Thr Ser Asn Gly
    370             375             380
Glu Gly His Gly Met Asn Pro Ser Leu Gln Ala Met Met Leu Met Gly
385             390                 395                 400
Phe Gly Asp Ile Phe Ser Met Asn Lys Ala Gly Ala Val Met His Ser
            405             410                 415
Gly Met Gln Ile Asn Met Gln Ala Lys Gln Asn Ser Ser Lys Thr Thr
        420                 425             430
Ser Lys Arg Arg Gly Lys Lys Val Asn Met Ala Leu Gly Phe Ser Asp
        435             440                 445
Phe Asp Leu Ser Glu Gly Asp Asp Asp Asp Asp Asp Asp Gly Glu Glu
    450             455                 460
Glu Tyr Asn Asp Met Asp Asn Ser Glu
465             470         473
```

```
<210> 838
<211> 48
<212>Amino acid
<213> Homo sapiens
```

```
<400> 838
Met Leu Trp Glu Thr Gly Cys Ser Ala Ala Cys Arg Val Thr Val Ser
1               5               10                  15
Pro Thr Val Thr Phe Ala Thr Phe Ser Thr Arg Gly Ile Asp Ala Met
            20              25              30
Arg Pro Gly Pro Ser Phe Leu Trp Arg Gln Gln Leu Ser Gln Gly *
        35              40              45      47
```

```
<210> 839
<211> 116
<212>Amino acid
<213> Homo sapiens
```

```
<220>
<221> misc_feature
<222> (1)...(116)
<223> X = any amino acid or stop code
```

```
<400> 839
Pro Thr Leu Gly Asp Gln Pro Asp Leu His Ser Ile Thr Arg Ala Ser
1               5               10                  15
Arg Pro Lys Leu Cys Thr Arg Lys Asn Cys Asn Pro Leu Thr Ile Thr
            20              25              30
Val His Asp Pro Asn Ser Thr Gln Xaa Tyr Tyr Gly Met Ser Trp Glu
        35              40              45
Leu Arg Phe Tyr Ile Pro Gly Phe Asp Val Gly Thr Met Phe Thr Ile
    50              55              60
Gln Lys Ile Leu Val Ser Trp Ser Pro Pro Lys Pro Ile Gly Pro Leu
65              70              75                  80
Thr Asp Leu Gly Asp Pro Met Phe Gln Lys Pro Pro Asn Lys Val Asp
```

```
                                85                    90                      95
Leu Thr Val Pro Pro Pro Phe Leu Val Ile Lys Asp Thr Leu Gln Lys
              100                 105                  110
Phe Glu Lys Ile
          115 116
```

```
          <210> 840
          <211> 138
          <212>Amino acid
          <213> Homo sapiens

          <220>
          <221> misc_feature
          <222> (1)...(138)
          <223> X = any amino acid or stop code
```

```
          <400> 840
Ser Leu Asn Asn Val Thr Leu Pro Gln Ala Lys Thr Glu Lys Asp Phe
  1               5                 10                  15
Ile Gln Leu Cys Thr Pro Gly Val Ile Lys Gln Glu Lys Leu Gly Thr
              20                 25                  30
Val Tyr Cys Gln Ala Ser Ser Pro Gly Ala Asn Met Ile Gly Asn Lys
          35                 40                  45
Met Ser Ala Ile Ser Val His Gly Val Ser Thr Ser Gly Gly Gln Met
      50                 55                  60
Tyr His Tyr Asp Met Asn Thr Ala Ser Leu Ser Gln Gln Xaa Asp Gln
65                 70                  75                      80
Lys Pro Ile Phe Asn Val Ile Pro Pro Ile Pro Val Gly Ser Glu Asn
              85                 90                  95
Trp Asn Arg Cys Gln Gly Ser Gly Asp Asp Asn Leu Thr Ser Leu Gly
          100                 105                  110
Thr Leu Asn Phe Pro Gly Arg Thr Val Ser Phe Ser Phe Glu Met Glu
          115                 120                  125
Ser Arg Ser Val Ala Gln Ala Gly Val Gln
      130                 135         138
```

```
          <210> 841
          <211> 82
          <212>Amino acid
          <213> Homo sapiens

          <220>
          <221> misc_feature
          <222> (1)...(82)
          <223> X = any amino acid or stop code
```

```
          <400> 841
Arg His Thr Gln Glu Cys Arg Cys Pro His Thr His Ile His Thr His
  1               5                 10                  15
Thr His Ser His Thr His Ser His Thr His Ser His Ser His Ser His
              20                 25                  30
Thr Thr Pro Arg Cys Ser His Thr Gln Pro Pro His Ala Gln Ala Pro
          35                 40                  45
Ala Leu Cys Xaa Ser Xaa Glu Asp Arg Gly Gln Pro Thr Trp Lys Leu
```

```
        50                    55                    60
Cys Ala His Arg Pro Arg Leu Lys Val Ile Lys Glu Gly Gly Trp Leu
65                    70                    75                    80
Gly Gly
    82
```

```
<210> 842
<211> 58
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(58)
<223> X = any amino acid or stop code
```

```
<400> 842
Asn Tyr Ser Leu Ser Val Tyr Leu Val Arg Gln Leu Thr Ala Gly Thr
1               5                    10                   15
Leu Leu Gln Lys Leu Arg Ala Lys Gly Ile Arg Asn Pro Asp His Ser
            20                   25                   30
Arg Ala Leu Ser Glu Xaa His Leu Ser Ser Leu Pro His Leu Ile Trp
        35                   40                   45
Ile Gln Val Phe Leu Ala Leu Gln Pro Ser
    50                   55        58
```

```
<210> 843
<211> 230
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(230)
<223> X = any amino acid or stop code
```

```
<400> 843
Ala Thr Tyr Ile Val Asp Phe Gly Phe Ser Thr Thr Phe Arg Glu Gly
1               5                    10                   15
Gln Met Leu Thr Ala Phe Cys Gly Met Tyr Pro Tyr Val Ala Pro Glu
            20                   25                   30
Arg Ser Leu Gly Gln Ala Cys Gln Xaa Pro Ala Arg Asp Ile Gln Ser
        35                   40                   45
Leu Ser Val Ile Leu Tyr Phe Arg Asn Thr Val Gly Arg Arg Ala Arg
    50                   55                   60
Thr Leu Pro Phe Tyr Ser Ala Glu Ala Ser Lys Leu Gln Glu Lys Ile
65                   70                   75                   80
Leu Thr Gly Arg Tyr His Ala Pro Pro Leu Leu Ala Leu Gln Leu Asp
                85                   90                   95
Ser Leu Ile Lys Leu Leu Met Leu Asn Ala Arg Lys Cys Pro Ser Leu
            100                  105                  110
Xaa Leu Met Lys Asn Pro Trp Val Lys Ser Ser Gln Lys Met Pro Leu
    115                  120                  125
Ile Pro Tyr Glu Glu Pro Leu Arg Gly Pro Pro Gln Thr Ile Gln Leu
```

```
            130                     135                     140
Met Val Ala Met Gly Phe Gln Ala Lys Asn Ile Ser Val Ala Ile Ile
145                     150                     155                     160
Glu Arg Lys Phe Asn Tyr Pro Met Ala Thr Tyr Leu Ile Leu Glu His
                        165                     170                     175
Thr Lys Gln Glu Arg Lys Cys Ser Thr Ile Arg Glu Leu Ser Leu Pro
                180                     185                     190
Pro Gly Val Pro Thr Ser Pro Ser Pro Ser Thr Glu Leu Ser Thr Phe
            195                     200                     205
Pro Leu Ser Leu Met Arg Ala His Arg Glu Pro Ala Phe Asn Val Gln
210                     215                     220
Pro Pro Glu Glu Ser Gln
225                     230
```

```
<210> 844
<211> 258
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(258)
<223> X = any amino acid or stop code
```

```
            <400> 844
Ala Lys Gln Glu Leu Ala Lys Leu Met Arg Ile Glu Asp Pro Ser Leu
 1                   5                   10                  15
Leu Asn Ser Arg Val Leu Leu His His Ala Lys Ala Gly Thr Ile Ile
                20                  25                  30
Ala Arg Gln Gly Asp Gln Asp Val Ser Leu His Phe Val Leu Trp Gly
            35                  40                  45
Cys Leu His Val Tyr Gln Arg Met Ile Asp Lys Ala Glu Asp Val Cys
        50                  55                  60
Leu Phe Val Ala Gln Pro Gly Glu Leu Val Gly Gln Leu Ala Val Leu
65                  70                  75                  80
Thr Gly Glu Pro Leu Ile Phe Thr Leu Arg Ala Gln Arg Asp Cys Thr
                85                  90                  95
Phe Leu Arg Ile Ser Lys Ser Asp Phe Tyr Glu Ile Met Arg Ala Gln
                100                 105                 110
Pro Ser Val Val Leu Ser Ala Ala His Thr Val Ala Ala Arg Met Ser
            115                 120                 125
Pro Phe Val Arg Gln Met Asp Phe Ala Ile Asp Trp Thr Ala Val Glu
        130                 135                 140
Ala Gly Arg Ala Leu Tyr Arg Cys Ser Ser His Arg Ala Ala Gln Ala
145                 150                 155                 160
Arg Pro Arg Gly Gly Asp Leu Gly Val Val Arg Pro Cys Xaa Pro Pro
                165                 170                 175
Arg Pro Leu Arg Gln Gly Asp Arg Ser Asp Cys Thr Tyr Ile Val Leu
            180                 185                 190
Asn Gly Arg Leu Arg Ser Val Ile Gln Arg Gly Ser Gly Lys Lys Glu
        195                 200                 205
Leu Val Gly Glu Tyr Gly Arg Gly Asp Leu Ile Gly Val Val Ser Ala
210                 215                 220
Thr Pro Thr His Xaa Pro Leu Ala Phe Ser Arg Pro Val Pro Arg Gln
225                 230                 235                 240
Leu Thr Arg Ile Ile Pro Gly Asn Pro Gly Ser Gly Glu Val Phe Pro
                245                 250                 255
Gly Ala
258
```

<210> 845
<211> 235
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(235)
<223> X = any amino acid or stop code

<400> 845

```
His Ala Ser Gly Trp Thr Pro Gly Thr Thr Gln Thr Leu Gly Gln Gly
1               5                   10                  15
Thr Ala Trp Asp Thr Val Ala Ser Thr Pro Gly Thr Ser Glu Thr Thr
            20                  25                  30
Ala Ser Ala Glu Gly Arg Arg Thr Pro Gly Ala Thr Arg Pro Ala Ala
        35                  40                  45
Pro Gly Thr Gly Ser Trp Ala Glu Gly Ser Val Lys Ala Pro Ala Pro
    50                  55                  60
Ile Pro Glu Ser Pro Pro Ser Lys Ser Arg Ser Met Ser Asn Thr Thr
65                  70                  75                  80
Glu Gly Val Trp Glu Gly Thr Arg Ser Ser Val Thr Asn Arg Ala Arg
                85                  90                  95
Ala Ser Lys Asp Arg Arg Glu Met Thr Thr Thr Lys Ala Asp Arg Pro
            100                 105                 110
Arg Glu Asp Ile Glu Gly Val Arg Ile Ala Leu Asp Ala Ala Lys Lys
        115                 120                 125
Val Leu Gly Thr Ile Gly Pro Pro Ala Leu Val Ser Glu Thr Leu Ala
    130                 135                 140
Trp Glu Ile Leu Pro Gln Ala Thr Pro Val Ser Lys Gln Gln Ser Gln
145                 150                 155                 160
Gly Ser Ile Gly Glu Thr Thr Pro Ala Ala Gly Met Trp Thr Leu Gly
                165                 170                 175
Thr Pro Ala Ala Asp Val Trp Ile Leu Gly Thr Pro Ala Ala Asp Val
            180                 185                 190
Trp Thr Ser Met Glu Ala Ala Ser Gly Glu Gly Ser Ala Ala Gly Asp
        195                 200                 205
Leu Asp Ala Ala Thr Gly Asp Arg Gly Pro Gln Ala Thr Leu Ser Gln
210                 215                 220
Thr Pro Ala Val Xaa Pro Trp Gly Pro Pro Gly
225                 230                 235
```

<210> 846
<211> 134
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(134)
<223> X = any amino acid or stop code

<400> 846

```
Ala Gly Thr Ser Gly Thr Gly Asp Thr Gly Pro Gly Asn Thr Ala Val
1               5                   10                  15
Ser Gly Thr Pro Val Val Ser Pro Gly Ala Thr Pro Gly Ala Pro Gly
            20                  25                  30
Ser Ser Thr Pro Gly Glu Ala Asp Ile Gly Asn Thr Ser Phe Gly Lys
            35                  40                  45
Ser Gly Thr Pro Thr Val Ser Ala Ala Ser Thr Thr Ser Ser Pro Val
    50                  55                  60
Ser Lys His Thr Asp Ala Ala Ser Ala Thr Ala Val Thr Ile Ser Gly
65              70                  75                  80
Ser Lys Pro Gly Thr Pro Gly Thr Pro Gly Gly Ala Thr Ser Gly Gly
            85                  90                  95
Lys Ile Thr Pro Gly Ile Ala Xaa Pro Thr Leu Asp Gln Lys Ser Pro
        100                 105                 110
Cys Phe Ser Gly Tyr Gly Gly Tyr Phe Pro Val Asn Pro His Gln Asn
        115                 120                 125
Pro Cys Ala Asp Ser Leu
    130             134
```

```
<210> 847
<211> 188
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(188)
<223> X = any amino acid or stop code
```

```
    <400> 847
Arg Ala His Arg Cys Cys Leu Pro Leu Pro Ser Leu Ser Cys Glu Ile
1               5                   10                  15
Gln Ile Gly Phe Ser Xaa Ser Ser Ile Phe Pro Gly Gln Xaa Ala Cys
            20                  25                  30
Pro Cys Ser Cys Cys Arg Ser Cys Arg Arg Asn Trp Pro Gln Ser Pro
        35                  40                  45
Arg Cys Pro His His Pro Pro Ala Pro Cys Ser Leu Leu Leu Ser Ser
    50                  55                  60
Cys Leu Pro Pro Pro Leu Ser Cys Ser Trp Arg Gly Thr Ser Gly Lys
65              70                  75                  80
Pro Pro Ser Gln Ser Pro Ala Ala Ser Arg Ser Met Arg Pro Arg Cys
            85                  90                  95
Ser Pro Arg Thr Ser Ser Leu Arg Gly Ala Ser Cys Arg Gly Pro Gly
        100                 105                 110
Gly Ser Ala Pro Ala Ala Ala Ser Gly Pro Arg Cys Arg Gly Cys Ser
        115                 120                 125
Arg Ser Pro Arg Arg Cys Ser Arg Ser Gly Cys Ala Ala Ala Ser Pro
    130             135                 140
Pro Arg Ser Gln Arg Arg Ser Pro Pro Leu Ser Pro Pro Pro Phe Pro
145             150                 155                 160
Thr Ser Gly Thr Leu Leu Leu Lys Thr Ser Arg Phe Gly Ser Ala Thr
            165                 170                 175
Arg Glu Xaa Ser Ser Pro Arg Pro Arg Pro Arg Pro
            180                 185         188
```

```
<210> 848
<211> 328
<212>Amino acid
```

<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(328)
<223> X = any amino acid or stop code

<400> 848

```
Asp Asp Val Pro Pro Pro Ala Pro Asp Leu Tyr Asp Val Pro Pro Gly
1               5                   10                  15
Leu Arg Arg Pro Gly Pro Gly Thr Leu Tyr Asp Val Pro Arg Glu Arg
            20                  25                  30
Val Leu Pro Pro Glu Val Ala Asp Gly Gly Val Val Asp Ser Gly Val
            35                  40                  45
Tyr Ala Val Pro Pro Pro Ala Glu Arg Glu Ala Pro Ala Glu Gly Lys
    50                  55                  60
Arg Leu Ser Ala Ser Ser Thr Gly Ser Thr Arg Ser Ser Gln Ser Ala
65                  70                  75                  80
Ser Ser Leu Glu Val Ala Gly Pro Gly Arg Glu Pro Leu Glu Leu Glu
                85                  90                  95
Val Ala Val Glu Ala Leu Ala Arg Leu Gln Gln Gly Val Ser Ala Thr
            100                 105                 110
Val Ala His Leu Leu Asp Leu Ala Gly Ser Ala Gly Ala Thr Gly Ser
            115                 120                 125
Trp Arg Ser Pro Ser Glu Pro Gln Glu Pro Leu Val Gln Asp Leu Gln
130                 135                 140
Ala Ala Val Ala Ala Val Gln Ser Ala Val His Glu Leu Leu Glu Phe
145                 150                 155                 160
Ala Arg Ser Ala Val Gly Asn Ala Ala His Thr Ser Asp Arg Ala Leu
            165                 170                 175
His Ala Lys Leu Ser Arg Gln Leu Gln Lys Met Glu Asp Val His Gln
            180                 185                 190
Thr Leu Val Ala His Gly Gln Ala Leu Asp Ala Gly Arg Gly Gly Ser
            195                 200                 205
Gly Ala Thr Leu Glu Asp Leu Asp Arg Leu Val Ala Cys Ser Arg Ala
    210                 215                 220
Val Pro Glu Asp Ala Lys Gln Leu Ala Ser Phe Leu His Gly Asn Ala
225                 230                 235                 240
Ser Leu Leu Phe Arg Arg Thr Lys Ala Thr Ala Pro Gly Pro Glu Gly
            245                 250                 255
Gly Gly Thr Leu His Pro Asn Pro Thr Asp Lys Thr Ser Ser Ile Gln
            260                 265                 270
Ser Arg Pro Leu Pro Ser Pro Pro Lys Phe Thr Ser Gln Asp Ser Pro
    275                 280                 285
Asp Gly Gln Tyr Glu Asn Ser Glu Gly Gly Trp Met Glu Asp Tyr Asp
    290                 295                 300
Tyr Val His Leu Thr Gly Gly Arg Arg Ser Phe Xaa Lys Thr Gln Lys
305                 310                 315                 320
Glu Leu Leu Gly Lys Arg Ala Ala
                325         328
```

<210> 849
<211> 98
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(98)

<223> X = any amino acid or stop code

<400> 849
Met Ala Thr Asp Glu Glu Asn Val Tyr Gly Leu Glu Glu Asn Ala Gln
1   5   10   15
Ser Arg Gln Glu Ser Thr Arg Arg Leu Ile Leu Val Gly Arg Thr Gly
        20   25   30
Ala Gly Lys Ser Ala Thr Gly Asn Ser Ile Leu Gly Gln Arg Arg Phe
        35   40   45
Phe Ser Arg Leu Gly Ala Thr Ser Val Thr Arg Ala Cys Thr Thr Gly
    50   55   60
Ser Arg Arg Trp Asp Lys Cys His Val Glu Val Val Asp Thr Pro Asp
65   70   75   80
Ile Phe Ser Ser Gln Val Ser Lys Thr Asp Pro Gly Cys Glu Glu Arg
                85   90   95
Xaa *
97

<210> 850
<211> 94
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(94)
<223> X = any amino acid or stop code

<400> 850
Thr Leu Gly Leu Arg Ser Leu Thr Lys Glu Gly Gly Gly Gly Gly Asp
1   5   10   15
Val Ala Ala Phe Glu Val Gly Thr Gly Ala Ala Ala Ser Arg Ala Leu
        20   25   30
Gly Gln Cys Gly Gln Leu Gln Lys Leu Ile Val Ile Phe Ile Gly Ser
        35   40   45
Leu Cys Gly Leu Cys Thr Lys Cys Ala Val Ser Asn Asp Leu Thr Gln
    50   55   60
Gln Glu Ile Gln Thr Pro Glu Ile Gln Gln Arg Asn Ala Xaa Cys Asp
65   70   75   80
Ser Arg Val Thr Phe Thr Asn Glu Gly Gly Arg Trp Trp Gly
                85   90   94

<210> 851
<211> 50
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(50)
<223> X = any amino acid or stop code

```
      <400> 851
Phe Phe Phe Leu Val Glu Thr Arg Phe His His Ile Gly Gln Ala Gly
1                 5                   10                  15
Leu Glu Leu Leu Thr Leu Ser Ile Lys Xaa Ser Ala Arg Leu Gly Leu
            20                  25                  30
Pro Lys Cys Trp Asp Asp Arg Arg Glu Pro Pro Tyr Leu Ala Gly Phe
        35                  40                  45
Met Ile
    50
```

```
      <210> 852
      <211> 143
      <212>Amino acid
      <213> Homo sapiens
```

```
      <400> 852
Arg Arg Ser Pro Pro Pro Ala Pro Pro Pro Leu Pro Ser Pro Leu Ser
1                 5                   10                  15
Pro Pro Pro Arg Ala Pro Val Ser Pro Ala Ser Thr Met Pro Ile Leu
            20                  25                  30
Leu Phe Leu Ile Asp Thr Ser Ala Ser Met Asn Gln Arg Ser His Leu
        35                  40                  45
Gly Thr Thr Tyr Leu Asp Thr Ala Lys Gly Ala Val Glu Thr Phe Met
    50                  55                  60
Lys Leu Arg Ala Arg Asp Pro Ala Ser Arg Gly Asp Arg Tyr Met Leu
65                  70                  75                  80
Val Thr Phe Glu Glu Pro Pro Tyr Ala Ile Lys Ala Gly Trp Lys Glu
                85                  90                  95
Asn His Ala Thr Phe Met Asn Glu Leu Lys Asn Leu Gln Ala Glu Gly
            100                 105                 110
Leu Thr Thr Leu Gly Gln Ser Leu Arg Thr Ala Phe Asp Leu Leu Asn
        115                 120                 125
Leu Asn Arg Leu Val Thr Gly Ile Asp Asn Tyr Gly Gln Val Gly
    130                 135                 140         143
```

```
      <210> 853
      <211> 154
      <212>Amino acid
      <213> Homo sapiens
```

```
      <400> 853
Asn Cys Arg Thr Tyr Val Phe Cys Phe Val Leu Val Phe Arg Leu Leu
1                 5                   10                  15
Phe Leu His Gly Ser Pro Leu Ser Pro Ser Leu Leu Ser Arg Ala Gly
            20                  25                  30
Leu Leu Cys Gly Ser Ala Glu Asn Pro Thr Pro Phe Leu Cys Gly Ile
        35                  40                  45
Thr Met Ala Ala Gly Val Ser Leu Leu Ala Leu Val Val Arg Val Ile
    50                  55                  60
Leu Ser Thr Ala Ile Leu Cys Pro Ser Gly Ala Ser Arg Arg Gln Arg
65                  70                  75                  80
Ser Ser Glu Val Glu Trp Gly Thr Asp Ser Gly Val Tyr Arg Leu Tyr
```

```
                    85                  90                   95
Cys Trp Arg Val Gly Phe Leu Gly Pro Gly Gly Glu Leu Arg Leu Gly
                100                 105                 110
Leu Ser Glu Ala Arg Gly Gly Arg Val Trp Gly Arg Gly Glu Lys Arg
            115                 120                 125
Cys Arg Val Trp Ala Val Arg Ser Leu Arg Lys Gly Phe Gly Ser Val
        130                 135                 140
Ala Ala Leu Arg Arg Gly Ile Trp Ala Gly
145                 150                 154
```

```
    <210> 854
    <211> 90
    <212>Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(90)
    <223> X = any amino acid or stop code
```

```
    <400> 854
Val Thr Pro Thr Pro Pro Gln Tyr Tyr Thr Cys Ser Cys Val Leu Gly
1               5                   10                  15
Phe Ile Ala Cys Ser Ile Phe Leu Gln Met Ser Leu Lys Pro Lys Val
            20                  25                  30
Met Leu Leu Thr Val Ala Leu Val Ala Cys Leu Val Leu Phe Asn Leu
        35                  40                  45
Ser Gln Cys Trp Gln Arg Asp Cys Cys Ser Gln Gly Leu Gly Asn Leu
    50                  55                  60
Thr Glu Pro Ser Gly Thr Asn Arg Xaa Gly Pro Ala Ala Val Ser Trp
65                  70                  75                  80
Ala Ser Leu Pro Ala Pro Ser Ser Cys Arg
            85                  90
```

```
    <210> 855
    <211> 61
    <212>Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(61)
    <223> X = any amino acid or stop code
```

```
    <400> 855
Gly Lys Ala Gly Gly Ala Ala Gly Leu Phe Ala Lys Gln Val Gln Lys
1               5                   10                  15
Lys Phe Ser Arg Ala Gln Glu Lys Xaa Thr Arg Arg Phe Gly Lys Thr
            20                  25                  30
Cys Gln Pro Glu Glu Arg Ala Arg Glu Glu Arg Gln Glu Gly Pro Glu
        35                  40                  45
Ile Glu Phe Gly Phe Ser Phe Phe Ser Leu Ser Leu Tyr
    50                  55                  60  61
```

```
<210> 856
<211> 779
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(779)
<223> X = any amino acid or stop code
```

```
<400> 856
Pro Lys Arg Leu Phe Leu Phe Gln Asp Val Asn Thr Leu Gln Gly Gly
1               5                   10                  15
Gly Gln Pro Val Val Thr Pro Ser Val Gln Pro Ser Leu Gln Pro Ala
            20                  25                  30
His Pro Ala Leu Pro Gln Met Thr Ser Gln Ala Pro Gln Pro Ser Val
        35                  40                  45
Thr Gly Leu Gln Ala Pro Ser Ala Ala Leu Met Gln Val Ser Ser Leu
    50                  55                      60
Asp Ser His Ser Ala Val Ser Gly Asn Ala Gln Ser Phe Gln Pro Tyr
65                  70                  75                  80
Ala Gly Met Gln Ala Tyr Ala Tyr Pro Gln Ala Ser Ala Val Thr Ser
                85                  90                  95
Gln Leu Gln Pro Val Arg Pro Leu Tyr Pro Ala Pro Leu Ser Gln Pro
            100                 105                 110
Pro His Phe Gln Gly Ser Gly Asp Met Ala Ser Phe Leu Met Thr Glu
        115                 120                 125
Ala Arg Gln His Asn Thr Glu Ile Arg Met Ala Val Ser Lys Val Ala
    130                 135                 140
Asp Lys Met Asp His Leu Met Thr Lys Val Glu Glu Leu Gln Lys His
145                 150                 155                 160
Ser Ala Gly Asn Ser Met Leu Ile Pro Ser Met Ser Val Thr Met Glu
                165                 170                 175
Thr Ser Met Ile Met Ser Asn Ile Gln Arg Ile Ile Gln Glu Asn Glu
            180                 185                 190
Arg Leu Lys Gln Glu Ile Leu Glu Lys Ser Asn Arg Ile Glu Glu Gln
        195                 200                 205
Asn Asp Lys Ile Ser Glu Leu Ile Glu Arg Asn Gln Arg Tyr Val Glu
    210                 215                 220
Gln Ser Asn Leu Met Met Glu Lys Arg Asn Asn Ser Leu Gln Thr Ala
225                 230                 235                 240
Thr Glu Asn Thr Gln Ala Arg Val Leu His Ala Glu Gln Glu Lys Ala
                245                 250                 255
Lys Val Thr Glu Glu Leu Ala Ala Ala Thr Ala Gln Val Ser His Leu
            260                 265                 270
Gln Leu Lys Met Thr Ala His Gln Lys Lys Glu Thr Glu Leu Gln Met
        275                 280                 285
Gln Leu Thr Glu Ser Leu Lys Glu Thr Asp Leu Leu Arg Gly Gln Leu
    290                 295                 300
Thr Lys Val Gln Ala Lys Leu Ser Glu Leu Gln Glu Thr Ser Glu Gln
305                 310                 315                 320
Ala Gln Ser Lys Phe Lys Ser Glu Lys Gln Asn Arg Lys Gln Leu Glu
                325                 330                 335
Leu Lys Val Thr Ser Leu Glu Glu Glu Leu Thr Asp Leu Arg Val Glu
            340                 345                 350
Lys Glu Ser Leu Glu Lys Asn Leu Ser Glu Arg Lys Lys Lys Ser Ala
        355                 360                 365
Gln Glu Arg Ser Gln Ala Glu Glu Glu Ile Asp Glu Ile Arg Lys Ser
    370                 375                 380
```

```
Tyr Gln Glu Glu Leu Asp Lys Leu Arg Gln Leu Leu Lys Lys Thr Arg
385             390             395             400
Val Ser Thr Asp Gln Ala Ala Ala Glu Gln Leu Ser Leu Val Gln Ala
            405             410             415
Glu Leu Gln Thr Gln Trp Glu Ala Lys Cys Glu His Leu Leu Ala Ser
        420             425             430
Ala Lys Asp Glu His Leu Gln Gln Tyr Gln Glu Val Cys Ala Gln Arg
        435             440             445
Asp Ala Tyr Gln Gln Lys Leu Val Gln Leu Gln Glu Lys Ser Val Cys
450             455             460
Phe Ala Cys Leu Ala Leu Gln Ala Gln Ile Thr Ala Leu Thr Lys Gln
465             470             475             480
Asn Glu Gln His Ile Lys Glu Leu Glu Lys Asn Lys Ser Gln Met Ser
            485             490             495
Gly Val Glu Ala Ala Ala Ser Asp Pro Ser Glu Lys Val Lys Lys Ile
        500             505             510
Met Asn Gln Val Phe Gln Ser Leu Arg Arg Glu Phe Glu Leu Glu Glu
        515             520             525
Ser Tyr Asn Gly Arg Thr Ile Leu Gly Thr Ile Met Asn Thr Ile Lys
530             535             540
Met Val Thr Leu Gln Leu Leu Asn Gln Gln Glu Gln Glu Lys Glu Glu
545             550             555             560
Ser Ser Ser Glu Glu Glu Glu Glu Lys Ala Glu Glu Arg Pro Arg Arg
            565             570             575
Pro Ser Gln Glu Gln Ser Ala Ser Ala Ser Ser Gly Gln Pro Gln Ala
        580             585             590
Pro Leu Asn Arg Glu Arg Pro Glu Ser Pro Met Val Pro Ser Glu Gln
        595             600             605
Val Val Glu Glu Ala Val Pro Leu Pro Pro Gln Ala Leu Thr Thr Ser
610             615             620
Gln Asp Gly His Arg Arg Lys Gly Asp Ser Glu Ala Glu Ala Leu Ser
625             630             635             640
Glu Ile Lys Asp Gly Ser Leu Pro Pro Glu Leu Ser Cys Ile Pro Ser
            645             650             655
His Arg Val Leu Gly Pro Pro Thr Ser Ile Pro Pro Glu Pro Leu Gly
        660             665             670
Pro Val Ser Met Asp Ser Glu Cys Glu Glu Ser Leu Ala Ala Ser Pro
        675             680             685
Met Ala Ala Lys Pro Asp Asn Pro Ser Gly Lys Val Cys Val Gln Gly
        690             695             700
Lys Xaa Ala Pro Asp Gly Pro Thr Tyr Lys Glu Ser Ser Thr Arg Leu
705             710             715             720
Phe Pro Gly Phe Gln Asp Pro Glu Glu Gly Asp Pro Leu Ala Leu Gly
            725             730             735
Leu Glu Ser Pro Gly Glu Pro Gln Pro Pro Gln Leu Gln Gly Lys Val
        740             745             750
Asp Val His Xaa Val Pro Pro Val Pro His Lys Gly Ala Phe Gln Glu
        755             760             765
Gln Glu Gly Arg Phe Pro Gln Phe Cys Arg Glu
770             775             779
```

```
<210> 857
<211> 510
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(510)
<223> X = any amino acid or stop code
```

<400> 857

```
Ser Glu Thr Ala Gln Gln Ile Ile Asp Arg Leu Arg Val Lys Leu Ala
1               5                   10                  15
Lys Glu Pro Gly Ala Asn Leu Phe Leu Met Ala Val Gln Asp Ile Arg
            20                  25                  30
Val Gly Gly Arg Gln Ser Asn Ala Ser Tyr Gln Tyr Thr Leu Leu Ser
            35                  40                  45
Asp Asp Leu Ala Ala Leu Arg Glu Trp Glu Pro Lys Ile Arg Lys Lys
    50                  55                  60
Leu Ala Thr Leu Pro Glu Leu Ala Asp Val Asn Ser Asp Gln Gln Asp
65                  70                  75                  80
Asn Gly Ala Glu Met Asn Leu Val Tyr Asp Arg Asp Thr Met Ala Arg
                85                  90                  95
Leu Gly Ile Asp Val Gln Ala Ala Asn Ser Leu Leu Asn Asn Ala Phe
            100                 105                 110
Gly Gln Arg Gln Ile Ser Thr Ile Tyr Gln Pro Met Asn Gln Tyr Lys
            115                 120                 125
Val Val Met Glu Val Asp Pro Arg Tyr Thr Gln Asp Ile Ser Ala Leu
    130                 135                 140
Glu Lys Met Phe Val Ile Asn Asn Glu Gly Lys Ala Ile Pro Leu Ser
145                 150                 155                 160
Tyr Phe Ala Lys Trp Gln Pro Ala Asn Ala Pro Leu Ser Val Asn His
            165                 170                 175
Gln Gly Leu Ser Ala Ala Leu Thr Ile Ser Phe Asn Leu Pro Thr Gly
            180                 185                 190
Lys Ser Leu Ser Asp Ala Ser Ala Ala Ile Asp Arg Ala Met Ser Gln
            195                 200                 205
Leu Gly Val Pro Ser Thr Val Arg Gly Ser Phe Ala Gly Pro Ala Gln
    210                 215                 220
Val Phe Gln Glu Thr Met Asn Ser Gln Val Ile Leu Ile Ile Ala Ala
225                 230                 235                 240
Ile Ala Thr Val Tyr Ile Val Leu Gly Ile Pro Tyr Glu Arg Tyr Val
            245                 250                 255
His Pro Pro Thr Ile Leu Leu Xaa Arg Pro Gly Ala Asn Leu Phe Leu
            260                 265                 270
Met Ala Val Gln Asp Ile Arg Val Gly Gly Arg Gln Ser Asn Ala Ser
            275                 280                 285
Tyr Gln Tyr Thr Leu Leu Ser Asp Asp Leu Ala Ala Leu Arg Glu Trp
    290                 295                 300
Glu Pro Lys Ile Arg Lys Lys Leu Ala Thr Leu Pro Glu Leu Ala Asp
305                 310                 315                 320
Val Asn Ser Asp Gln Gln Asp Asn Gly Ala Glu Met Asn Leu Val Tyr
            325                 330                 335
Asp Arg Asp Thr Met Ala Arg Leu Gly Ile Asp Val Gln Ala Ala Asn
            340                 345                 350
Ser Leu Leu Asn Asn Ala Phe Gly Gln Arg Gln Ile Ser Thr Ile Tyr
            355                 360                 365
Gln Pro Met Asn Gln Tyr Lys Val Val Met Glu Val Asp Pro Arg Tyr
    370                 375                 380
Thr Gln Asp Ile Ser Ala Leu Glu Lys Met Phe Val Ile Asn Asn Glu
385                 390                 395                 400
Gly Lys Ala Ile Pro Leu Ser Tyr Phe Ala Lys Trp Gln Pro Ala Asn
            405                 410                 415
Ala Pro Leu Ser Val Asn His Gln Gly Leu Ser Ala Ala Leu Thr Ile
            420                 425                 430
Ser Phe Asn Leu Pro Thr Gly Lys Ser Leu Ser Asp Ala Ser Ala Ala
            435                 440                 445
Ile Asp Arg Ala Met Ser Gln Leu Gly Val Pro Ser Thr Val Arg Gly
    450                 455                 460
Ser Phe Ala Gly Pro Ala Gln Val Phe Gln Glu Thr Met Asn Ser Gln
465                 470                 475                 480
Val Ile Leu Ile Ile Ala Ala Ile Ala Thr Val Tyr Ile Val Leu Gly
```

```
                    485                   490                   495
Ile Pro Tyr Glu Arg Tyr Val His Pro Pro Thr Ile Leu Leu
            500                   505                   510
```

```
        <210> 858
        <211> 137
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(137)
        <223> X = any amino acid or stop code
```

```
        <400> 858
Ile Ile Thr Pro Asp Ala Met Gly Cys Gln Lys Asp Ile Ala Glu Lys
1                 5                   10                  15
Ile Gln Lys Gln Gly Gly Asp Tyr Leu Phe Ala Val Lys Gly Asn Gln
            20                  25                  30
Gly Arg Leu Asn Lys Ala Phe Glu Glu Lys Phe Pro Leu Lys Glu Leu
        35                  40                  45
Asn Asn Pro Glu His Asp Ser Tyr Ala Ile Ser Glu Lys Ser His Gly
    50                  55                  60
Arg Glu Glu Ile Arg Leu His Ile Val Cys Asp Val Pro Asp Glu Leu
65                  70                  75                      80
Ile Asp Phe Thr Phe Glu Trp Lys Gly Leu Lys Lys Leu Cys Val Ala
            85                  90                  95
Val Ser Phe Arg Ser Ile Ile Ala Glu Gln Lys Lys Glu Pro Glu Met
            100                 105                 110
Thr Val Arg Tyr Asn Ile Ser Xaa Leu Gly Ile Ala Gly Asp Ile Ser
        115                 120                 125
Val Thr Ala Ile Ser Gly Thr Asp Asp
130                 135     137
```

```
        <210> 859
        <211> 123
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(123)
        <223> X = any amino acid or stop code
```

```
        <400> 859
His Tyr Leu Lys Met Leu Thr Gln Ala Arg Arg Glu Val Ile Ile Ala
1                 5                   10                  15
Asn Ala Tyr Phe Phe Pro Gly Tyr Arg Phe Leu His Ala Leu Arg Lys
            20                  25                  30
Ala Ala Arg Arg Gly Val Arg Ile Lys Leu Ile Ile Gln Gly Glu Pro
        35                  40                  45
Asp Met Pro Ile Val Arg Val Gly Ala Arg Leu Leu Tyr Asn Tyr Leu
    50                  55                  60
Val Lys Gly Gly Val Gln Val Phe Glu Tyr Arg Arg Arg Pro Leu His
```

```
        65                      70                      75                      80
Gly Lys Val Ala Leu Met Asp Asp His Trp Ala Thr Val Gly Ser Ser
                        85                      90                      95
Asn Leu His Pro Val Ser Xaa Ser Gly Asn Leu Gln Ala Asn Val Ile
                100                     105                     110
Leu His Val Leu Arg Val Pro Thr Leu Asn Pro
                115                     120     123
```

<210> 860
<211> 190
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(190)
<223> X = any amino acid or stop code

<400> 860
```
Cys Trp Ser Lys Ser Ala Ala Phe His Ser Lys Leu Ala Thr Thr Cys
1                   5                   10                      15
Ile Val Pro Val Cys Ala Ala Gly His Cys Ser Ala Ala Trp Xaa Ser
                20                      25                      30
Leu Arg Pro Ile Glu Ala Leu Ala Lys Glu Val Arg Glu Leu Lys Xaa
        35                      40                      45
His Thr Arg Xaa Leu Leu Asn Pro Ala Thr Thr Arg Glu Leu Thr Ser
    50                      55                      60
Leu Gly Arg Asn Leu Asn Arg Leu Leu Lys Ser Glu Arg Glu Arg Tyr
65                      70                      75                      80
Asp Lys Tyr Arg Thr Thr Leu Thr Asp Leu Thr His Ser Leu Lys Thr
                85                      90                      95
Pro Leu Ala Val Leu Gln Ser Thr Leu Arg Ser Leu Arg Ser Glu Lys
                100                     105                     110
Met Ser Val Ser Asp Ala Glu Pro Val Met Leu Glu Gln Ile Ser Arg
                115                     120                     125
Ile Ser Gln Gln Ile Gly Tyr Tyr Leu His Arg Ala Ser Met Arg Gly
    130                     135                     140
Gly Thr Leu Leu Ser Arg Glu Leu His Pro Val Ala Pro Leu Leu Asp
145                     150                     155                     160
Asn Leu Thr Ser Ala Leu Ile Lys Gly Lys Pro Arg Lys Gly Gly Asn
                165                     170                     175
Val Thr Val Phe Pro Phe Thr Ala Met Tyr Arg Asp Gly His
                180                     185                     190
```

<210> 861
<211> 241
<212> Amino acid
<213> Homo sapiens

<400> 861
```
Gly Asn Thr Val Met Phe Gln His Leu Met Gln Lys Arg Lys His Thr
1                   5                   10                      15
Gln Trp Thr Tyr Gly Pro Leu Thr Ser Thr Leu Tyr Asp Leu Thr Glu
                20                      25                      30
```

```
 Ile Asp Ser Ser Gly Asp Glu Gln Ser Leu Leu Glu Leu Ile Ile Thr
         35                      40                  45
 Thr Lys Lys Arg Glu Ala Arg Gln Ile Leu Asp Gln Thr Pro Val Lys
     50                  55                  60
 Glu Leu Val Ser Leu Lys Trp Lys Arg Tyr Gly Arg Pro Tyr Phe Cys
 65                  70                  75                      80
 Met Leu Gly Ala Ile Tyr Leu Leu Tyr Ile Ile Cys Phe Thr Met Cys
                 85                  90                      95
 Cys Ile Tyr Arg Pro Leu Lys Pro Arg Thr Asn Asn Arg Thr Ser Pro
                 100                 105                 110
 Arg Asp Asn Thr Leu Leu Gln Gln Lys Leu Leu Gln Glu Ala Tyr Met
             115                 120                 125
 Thr Pro Lys Asp Asp Ile Arg Leu Val Gly Glu Leu Val Thr Val Ile
     130                 135                 140
 Gly Ala Ile Ile Ile Leu Leu Val Glu Val Pro Asp Ile Phe Arg Met
 145                 150                 155                 160
 Gly Val Thr Arg Phe Phe Gly Gln Thr Ile Leu Gly Gly Pro Phe His
                 165                 170                 175
 Val Leu Ile Ile Thr Tyr Ala Phe Met Val Leu Val Thr Met Val Met
                 180                 185                 190
 Arg Leu Ile Ser Ala Ser Gly Glu Val Val Pro Met Ser Phe Ala Leu
             195                 200                 205
 Val Leu Gly Trp Cys Asn Val Met Tyr Phe Ala Arg Gly Phe Gln Met
     210                 215                 220
 Leu Gly Pro Phe Thr Ile Met Ile Gln Lys Met Ile Phe Gly Asp Leu
 225                 230                 235                 240
 Met
 241
```

```
     <210> 862
     <211> 45
     <212>Amino acid
     <213> Homo sapiens
```

```
     <400> 862
 Glu Lys Ala Ala Ala Ala Asn Ile Asp Glu Val Gln Lys Ser Asp Val
 1               5               10                  15
 Ser Ser Thr Gly Gln Gly Val Ile Asp Lys Asp Ala Leu Gly Pro Met
             20                  25                  30
 Met Leu Glu Val Ala His Leu His Phe Ser Ala Val Phe
         35                  40                  45
```

```
     <210> 863
     <211> 120
     <212>Amino acid
     <213> Homo sapiens
```

```
     <400> 863
 Leu Glu Val Pro Ser Glu Val Thr Pro Leu Gly Phe Ala Met Gln Ala
 1               5               10                  15
 Thr Lys Thr Leu Leu Leu Arg Thr Cys Cys Leu Gln Glu Phe Asn Ile
             20                  25                  30
 Met Glu Lys Asn Lys Gly Trp Ala Leu Leu Gly Gly Lys Asp Gly His
         35                  40                  45
```

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```
Leu Gln Gly Leu Phe Leu Leu Ala Asn Ala Leu Leu Glu Arg Asn Gln
    50                  55                      60
Leu Leu Ala Gln Lys Val Met Tyr Leu Leu Val Pro Leu Leu Asn Arg
65                  70                      75                  80
Gly Asn Asp Lys His Lys Leu Thr Ser Ala Gly Phe Phe Val Glu Leu
                85                      90                      95
Leu Arg Ser Pro Val Ala Lys Arg Leu Pro Ser Ile Tyr Ser Val Ala
            100                     105                 110
Arg Phe Lys Asp Trp Leu Gln Asp
        115                 120
```

```
<210> 864
<211> 124
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(124)
<223> X = any amino acid or stop code
```

```
<400> 864
Arg Pro Ala Pro Ala Pro Ser Ala Ala Pro Glu Glu Ala Pro Ser Pro
1                   5                   10                  15
Gly Val Lys Gly Arg Gly Met Ala Lys Arg Arg Val Pro Ala Pro Val
                20                  25                  30
Trp Gly Gly Ala Gly Gly Gly Thr Lys Ser Ala Arg Arg Ala Ala Ala
            35                  40                  45
Ala Pro Asp Thr Glu Arg Ser Glu Glu Gly Gly Arg Ala Val Lys Glu
        50                  55                  60
Ala Tyr Pro Ser Ser Arg Gln Pro Pro Pro Pro Ser Pro Xaa Pro Leu
65                  70                  75                  80
Arg Cys Ala Arg Arg Cys His Pro Asn Leu Ala Pro Ser Met Pro Ile
                85                  90                  95
Ser Asn Arg Glu Gly Lys Gly Lys Arg Arg Glu Glu Lys Ile Arg Pro
            100                 105                 110
Leu Ser Pro Ala Ser Thr His Thr Ser Ala Arg Ala
        115                 120                 124
```

```
<210> 865
<211> 120
<212>Amino acid
<213> Homo sapiens
```

```
<400> 865
Leu Gln Gly Val His Gly Ser Ser Ser Thr Phe Cys Ser Ser Leu Ser
1                   5                   10                  15
Ser Asp Phe Asp Pro Leu Glu Tyr Cys Ser Pro Lys Gly Asp Pro Gln
            20                  25                  30
Arg Val Asp Met Gln Pro Ser Val Thr Ser Arg Pro Arg Ser Leu Asp
        35                  40                  45
Ser Glu Val Pro Thr Gly Glu Thr Gln Val Ser Ser His Val His Tyr
        50                  55                  60
His Arg His Arg His His His Tyr Lys Lys Arg Phe Gln Arg His Gly
```

```
    65                    70                    75                    80
Arg Lys Pro Gly Pro Glu Thr Gly Val Pro Gln Ser Arg Pro Pro Ile
                  85                    90                    95
Pro Arg Thr Gln Pro Gln Pro Glu Pro Pro Ser Pro Asp Gln Gln Val
              100                   105                   110
Thr Arg Ser Asn Ser Ala Ala Pro
              115                   120
```

```
    <210> 866
    <211> 82
    <212> Amino acid
    <213> Homo sapiens
```

```
    <400> 866
Met Ala Asp Pro Asp Pro Arg Tyr Pro Arg Ser Ser Ile Glu Asp Asp
 1               5                    10                    15
Phe Asn Tyr Gly Ser Ser Glu Ala Ser Asp Thr Val His Ile Arg Met
              20                    25                    30
Ala Phe Leu Arg Arg Val Tyr Ser Ile Leu Ser Leu Gln Asp Leu Leu
          35                    40                    45
Ala Thr Val Thr Ser Thr Asp Asn Leu Ala Phe Glu Asp Gly Arg Thr
      50                    55                    60
Asp Trp Leu Gln Arg Pro Asp Cys Val Ser Phe Lys Ile His Val Leu
 65                   70                    75                    80
Pro Met
      82
```

```
    <210> 867
    <211> 60
    <212> Amino acid
    <213> Homo sapiens
```

```
    <400> 867
Ala Gly Met Ser Val Val Val Pro Pro Ile Gly Ser Ser Tyr Leu
 1               5                    10                    15
Gly Leu Ile Ser Gln Glu His Phe Pro Asn Glu Phe Thr Ser Gly Asp
              20                    25                    30
Gly Lys Lys Ala His Gln Asp Phe Gly Tyr Phe Tyr Gly Ser Ser Tyr
          35                    40                    45
Val Ala Ala Ser Asp Ser Ser Arg Thr Pro Gly Leu
      50                    55                    60
```

```
    <210> 868
    <211> 78
    <212> Amino acid
    <213> Homo sapiens
```

```
    <400> 868
Val Ala Ala Ala Leu Thr Leu Phe Pro Gln Gln Leu Ser Pro Pro Gly
```

```
1                    5                    10                    15
Ala Trp Gly Leu Gly Leu Ser Ala Cys Phe Cys Cys Ala Glu Gly Phe
             20                    25                    30
Ser Arg Leu Asn Gln Gln Val Leu Ser Ser Ser Leu Leu Leu Leu Ser
             35                    40                    45
Arg Thr Asn Cys Pro Cys Lys Tyr Ser Phe Leu Asp Asn Leu Lys Lys
         50                    55                    60
Leu Thr Pro Arg Arg Asp Val Pro Thr Tyr Pro Lys Val Arg
65                    70                    75            78
```

```
<210> 869
<211> 119
<212>Amino acid
<213> Homo sapiens
```

```
<400> 869
Arg Asp Asp Ala Cys Leu Tyr Ser Pro Ala Ser Ala Pro Glu Val Ile
1                    5                    10                    15
Thr Val Gly Ala Thr Asn Ala Gln Asp Gln Pro Val Thr Leu Gly Thr
             20                    25                    30
Leu Gly Thr Asn Phe Gly Arg Cys Val Asp Leu Phe Ala Pro Gly Glu
         35                    40                    45
Asp Ile Ile Gly Ala Ser Ser Asp Cys Ser Thr Cys Phe Val Ser Gln
     50                    55                    60
Ser Gly Thr Ser Gln Ala Ala Ala His Val Ala Gly Ile Ala Ala Met
65                    70                    75                    80
Met Leu Ser Ala Glu Pro Glu Leu Thr Leu Ala Glu Leu Arg Gln Arg
             85                    90                    95
Leu Ile His Phe Ser Ala Lys Asp Val Ile Asn Glu Ala Trp Phe Pro
         100                    105                    110
Glu Asp Gln Arg Val Leu Thr
     115                    119
```

```
<210> 870
<211> 34
<212>Amino acid
<213> Homo sapiens
```

```
<400> 870
Leu Glu Ile Lys Phe Leu Glu Gln Val Asp Gln Phe Tyr Asp Asp Asn
1                    5                    10                    15
Phe Pro Met Glu Ile Arg His Leu Leu Ala Gln Trp Ile Glu Asn Gln
             20                    25                    30
Asp Trp
     34
```

```
<210> 871
<211> 154
<212>Amino acid
<213> Homo sapiens
```

<400> 871

```
Glu Ala Gly Asp Ala Asp Glu Asp Glu Ala Asp Ala Asn Ser Ser Asp
1               5                   10                  15
Cys Glu Pro Glu Gly Pro Val Glu Ala Glu Glu Pro Pro Gln Glu Asp
            20                  25                  30
Ser Ser Ser Gln Ser Asp Ser Val Glu Asp Arg Ser Glu Asp Glu Glu
        35                  40                  45
Asp Glu His Ser Glu Glu Glu Glu Thr Ser Gly Ser Ser Ala Ser Glu
    50                  55                  60
Glu Ser Glu Ser Glu Glu Ser Glu Asp Ala Gln Ser Gln Ser Gln Ala
65                  70                  75                  80
Asp Glu Glu Glu Glu Asp Asp Asp Phe Gly Val Glu Tyr Leu Leu Ala
                85                  90                  95
Arg Asp Glu Glu Gln Ser Glu Ala Asp Ala Gly Ser Gly Pro Pro Thr
            100                 105                 110
Pro Gly Pro Thr Thr Leu Gly Pro Lys Lys Glu Ile Thr Asp Ile Ala
        115                 120                 125
Ala Ala Ala Glu Ser Leu Gln Pro Lys Gly Tyr Thr Leu Ala Thr Thr
    130                 135                 140
Gln Val Lys Thr Pro Ile Pro Leu Leu Leu
145                 150             154
```

```
<210> 872
<211> 118
<212>Amino acid
<213> Homo sapiens
```

<400> 872

```
Leu Lys Asn Leu Arg Glu Leu Leu Leu Glu Asp Asn Gln Leu Pro Gln
    1               5                   10                  15
Ile Pro Ser Gly Leu Pro Glu Ser Leu Thr Glu Leu Ser Leu Ile Gln
            20                  25                  30
Thr Asn Ile Tyr Asn Ile Thr Lys Glu Gly Ile Ser Arg Leu Ile Asn
        35                  40                  45
Leu Lys Asn Leu Tyr Leu Ala Trp Asn Cys Tyr Phe Asn Lys Val Cys
    50                  55                  60
Glu Lys Thr Asn Ile Glu Asp Gly Val Phe Glu Thr Leu Thr Asn Leu
65                  70                  75                  80
Glu Leu Leu Ser Leu Ser Phe Asn Ser Leu Ser His Val Pro Pro Lys
                85                  90                  95
Leu Pro Ser Ser Leu Arg Lys Leu Phe Leu Ser Asn Thr Gln Ile Lys
            100                 105                 110
Tyr Ile Ser Glu Glu Asp
        115             118
```

```
<210> 873
<211> 42
<212>Amino acid
<213> Homo sapiens
```

<400> 873

```
Met Arg Ser Gln Ala Leu Gly Gln Ser Ala Pro Ser Leu Thr Ala Ser
```

```
 1                  5                      10                        15
Leu Lys Glu Leu Ser Leu Pro Arg Arg Gly Ser Phe Pro Val Cys Pro
           20                      25                    30
Asn Ala Gly Arg Thr Ser Pro Leu Gly  *
           35                      40  41
```

```
        <210> 874
        <211> 70
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 874
Leu Leu Cys Val Cys Leu Pro Val Gly Ala Cys Pro Ser Leu Ser Leu
 1                  5                      10                        15
Leu Thr Ala Pro Leu Asn Gln Leu Met Arg Cys Leu Arg Lys Tyr Gln
           20                      25                    30
Ser Arg Thr Pro Ser Pro Leu Leu His Ser Val Pro Ser Glu Ile Val
           35                      40                    45
Phe Asp Phe Glu Pro Gly Pro Val Phe Arg Gly Ser Trp Ala Leu Leu
        50                  55                    60
Ser Trp Ser Thr Arg Pro
65                  70
```

```
        <210> 875
        <211> 41
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 875
Gln Thr Pro Asp Lys Lys Gln Asn Asp Gln Arg Asn Arg Lys Arg Lys
 1                  5                      10                        15
Ala Glu Pro Tyr Glu Thr Ser Gln Gly Ser Asn Asn Phe Val Ser Thr
           20                      25                    30
Lys Val Leu Asn Ser Asn Val Leu Arg
           35                      40  41
```

```
        <210> 876
        <211> 139
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 876
Tyr Phe Ile Ile Lys Gly Met Val Glu Leu Val Pro Ala Ser Asp Thr
 1                  5                      10                        15
Leu Arg Lys Ile Gln Val Glu Tyr Gly Val Thr Gly Ser Phe Lys Asp
           20                      25                    30
Lys Pro Leu Ala Glu Trp Leu Arg Lys Tyr Asn Pro Ser Glu Glu Glu
        35                  40                    45
Tyr Glu Lys Ala Ser Glu Asn Phe Ile Tyr Ser Cys Ala Gly Cys Cys
```

482

```
        50                      55                     60
Val Ala Thr Tyr Val Leu Gly Ile Cys Asp Arg His Asn Asp Asn Ile
65                      70                     75                     80
Met Leu Arg Ser Thr Gly His Met Phe His Ile Asp Phe Gly Lys Phe
                85                     90                     95
Leu Gly His Ala Gln Met Phe Gly Ser Phe Lys Arg Asp Arg Ala Pro
                100                    105                    110
Phe Val Leu Thr Ser Asp Met Ala Tyr Val Ile Asn Gly Gly Glu Lys
                115                    120                    125
Pro Thr Ile Arg Phe Gln Leu Phe Val Asp Leu
130                    135                    139
```

```
<210> 877
<211> 350
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(350)
<223> X = any amino acid or stop code
```

```
<400> 877
Pro Ser Pro Leu Pro Ser Leu Ser Leu Pro Pro Pro Val Ala Pro Gly
1                   5                    10                    15
Gly Gln Glu Ser Pro Ser Pro His Thr Ala Glu Val Glu Ser Glu Ala
                20                    25                    30
Ser Pro Pro Pro Ala Arg Pro Leu Pro Gly Glu Ala Arg Leu Ala Pro
        35                    40                    45
Ile Ser Glu Glu Gly Lys Pro Gln Leu Val Gly Arg Phe Gln Val Thr
        50                    55                    60
Ser Ser Lys Asn Arg Leu Ser Leu Phe Pro Cys Ser Gln His Pro Pro
65                    70                    75                    80
Leu Ser Leu Val Leu Gln Asn Leu Gln Pro Leu Ser Ser Leu Gln Arg
                85                    90                    95
Ala Gln Ile Gln Arg Thr Val Pro Gly Gly Gly Pro Glu Thr Arg Glu
                100                   105                   110
Ala Leu Ala Glu Ser Asp Arg Ala Ala Glu Gly Leu Gly Ala Gly Val
        115                   120                   125
Glu Glu Glu Gly Asp Asp Gly Lys Glu Pro Gln Val Gly Gly Ser Pro
        130                   135                   140
Gln Pro Leu Ser His Pro Ser Pro Val Trp Met Asn Tyr Ser Tyr Ser
145                   150                   155                   160
Ser Leu Cys Leu Ser Ser Glu Glu Ser Glu Ser Ser Gly Glu Asp Glu
                165                   170                   175
Glu Phe Trp Ala Glu Leu Gln Ser Leu Arg Gln Lys His Leu Ser Glu
                180                   185                   190
Val Glu Thr Leu Gln Thr Leu Gln Lys Lys Glu Ile Glu Asp Leu Tyr
                195                   200                   205
Ser Arg Leu Gly Lys Gln Pro Pro Gly Ile Val Ala Pro Ala Ala
210                   215                   220
Met Leu Ser Ser Arg Gln Arg Arg Leu Ser Lys Gly Ser Phe Pro Thr
225                   230                   235                   240
Ser Arg Arg Asn Ser Leu Gln Arg Ser Glu Pro Pro Gly Pro Gly Glu
                245                   250                   255
Thr Ala Gly His Pro Ala Ser Ile Phe Ser Leu Arg Pro Leu Ser Val
                260                   265                   270
Asp Cys Phe Ser Pro Gly Pro Gly Gly Leu Pro Arg Gly Asn Arg Pro
        275                   280                   285
```

483

```
Pro Leu Pro Thr Ser Pro Phe Leu Thr Xaa Cys Ser Pro Ser Pro His
    290                 295             300
Thr Ala Glu Val Glu Ser Glu Ala Ser Pro Pro Pro Ala Arg Pro Leu
305                 310             315                 320
Pro Gly Glu Ala Arg Leu Ala Pro Ile Ser Glu Glu Gly Lys Pro Gln
                325             330             335
Leu Val Gly Arg Phe Pro Ser Asp Phe Ile Gln Gly Thr Gly
            340             345             350
```

```
<210> 878
<211> 112
<212>Amino acid
<213> Homo sapiens
```

```
<400> 878
Arg Arg Phe Val Ser Gln Glu Thr Gly Asn Leu Tyr Ile Ala Lys Val
1               5               10              15
Glu Lys Ser Asp Val Gly Asn Tyr Thr Cys Val Val Thr Asn Thr Val
            20              25              30
Thr Asn His Lys Val Leu Gly Pro Pro Thr Pro Leu Ile Leu Arg Asn
        35              40              45
Asp Gly Val Met Gly Glu Tyr Glu Pro Lys Ile Glu Val Gln Phe Pro
    50              55              60
Glu Thr Val Pro Thr Ala Lys Gly Ala Thr Val Lys Leu Glu Cys Phe
65              70              75              80
Ala Leu Gly Asn Pro Val Pro Thr Ile Ile Trp Arg Arg Ala Asp Gly
            85              90              95
Lys Pro Ile Ala Arg Lys Ala Arg Arg His Lys Ser Arg Val Gly Lys
        100             105             110     112
```

```
<210> 879
<211> 282
<212>Amino acid
<213> Homo sapiens
```

```
<400> 879
Met Leu Arg Thr Cys Tyr Val Leu Cys Ser Gln Ala Gly Pro Arg Ser
1               5               10              15
Arg Gly Trp Gln Ser Leu Ser Phe Asp Gly Gly Ala Phe His Leu Lys
            20              25              30
Gly Thr Gly Glu Leu Thr Arg Ala Leu Leu Val Leu Arg Leu Cys Ala
        35              40              45
Trp Pro Pro Leu Val Thr His Gly Leu Leu Leu Gln Ala Trp Ser Arg
    50              55              60
Arg Leu Leu Gly Ser Arg Leu Ser Gly Ala Phe Leu Arg Ala Ser Val
65              70              75              80
Tyr Gly Gln Phe Val Ala Gly Glu Thr Ala Glu Glu Val Lys Gly Cys
            85              90              95
Val Gln Gln Leu Arg Thr Leu Ser Leu Arg Pro Leu Leu Ala Val Pro
        100             105             110
Thr Glu Glu Glu Pro Asp Ser Ala Ala Lys Ser Gly Glu Ala Trp Tyr
    115             120             125
```

484

```
Glu Gly Asn Leu Gly Ala Met Leu Arg Cys Val Asp Leu Ser Arg Gly
    130             135             140
Leu Leu Glu Pro Pro Ser Leu Ala Glu Ala Ser Leu Met Gln Leu Lys
145             150             155             160
Val Thr Ala Leu Thr Ser Thr Arg Leu Cys Lys Glu Leu Ala Ser Trp
            165             170             175
Val Arg Arg Pro Gly Ala Ser Leu Glu Leu Ser Pro Glu Arg Leu Ala
        180             185             190
Glu Ala Met Asp Ser Gly Gln Asn Leu Gln Val Ser Cys Leu Asn Ala
    195             200             205
Glu Gln Asn Gln His Leu Arg Ala Ser Leu Ser Arg Leu His Arg Val
    210             215             220
Ala Gln Tyr Ala Arg Ala Gln His Val Arg Leu Leu Val Asp Ala Glu
225             230             235             240
Tyr Thr Ser Leu Asn Pro Ala Leu Ser Leu Leu Val Ala Ala Leu Ala
            245             250             255
Val Arg Trp Asn Ser Pro Gly Glu Gly Gly Pro Trp Val Trp Asn Thr
            260             265             270
Tyr Gln Ala Cys Leu Lys Asp Thr Phe  *
    275             280 281
```

```
<210> 880
<211> 29
<212>Amino acid
<213> Homo sapiens
```

```
<400> 880
Pro His His Arg Ile Ala Gly Asp Thr Ala Ile Asp Lys Asn Ile His
1               5               10              15
Gln Ser Val Ser Glu Gln Ile Lys Lys Asn Phe Ala Lys
            20              25              29
```

```
<210> 881
<211> 45
<212>Amino acid
<213> Homo sapiens
```

```
<400> 881
Gln Met Thr Asn Pro Phe Phe Leu Cys Phe Thr Thr Met Ile Ser Asn
1               5               10              15
Cys Asn Phe Phe Lys Gly Pro Pro Gly Pro Pro Gly Glu Lys Gly Asp
            20              25              30
Arg Gly Pro Thr Gly Glu Ser Gly Pro Arg Gly Phe Pro
        35              40              45
```

```
<210> 882
<211> 54
<212>Amino acid
<213> Homo sapiens
```

```
        <400> 882
Asn Gly Ile Ile Ala Ser Phe Phe Leu Arg Thr Phe Ile Phe Cys Phe
1                   5                   10                  15
Ile His Ile Gln Gly Cys Gln Ala Gly Gln Thr Ile Lys Val Gln Val
                20                  25                  30
Ser Phe Asp Leu Leu Ser Leu Met Phe Thr Phe Val Ser Pro Cys Thr
            35                  40                  45
Asn Asp Leu Ile Ile His
        50              54


        <210> 883
        <211> 479
        <212>Amino acid
        <213> Homo sapiens




        <400> 883
Lys Leu Ser Val Asn His Arg Arg Thr His Leu Thr Lys Leu Met His
1                   5                   10                  15
Thr Val Glu Gln Ala Thr Leu Arg Ile Ser Gln Ser Phe Gln Lys Thr
                20                  25                  30
Thr Glu Phe Asp Thr Asn Ser Thr Asp Ile Ala Leu Lys Val Phe Phe
            35                  40                  45
Phe Asp Ser Tyr Asn Met Lys His Ile His Pro His Met Asn Met Asp
        50                  55                  60
Gly Asp Tyr Ile Asn Ile Phe Pro Lys Arg Lys Ala Ala Tyr Asp Ser
65                  70                  75                  80
Asn Gly Asn Val Ala Val Ala Phe Leu Tyr Tyr Lys Ser Ile Gly Pro
                85                  90                  95
Leu Leu Ser Ser Ser Asp Asn Phe Leu Leu Lys Pro Gln Asn Tyr Asp
            100                 105                 110
Asn Ser Glu Glu Glu Glu Arg Val Ile Ser Ser Val Ile Ser Val Ser
        115                 120                 125
Met Ser Ser Asn Pro Pro Thr Leu Tyr Glu Leu Glu Lys Ile Thr Phe
        130                 135                 140
Thr Leu Ser His Arg Lys Val Thr Asp Arg Tyr Arg Ser Leu Cys Ala
145                 150                 155                 160
Phe Trp Asn Tyr Ser Pro Asp Thr Met Asn Gly Ser Trp Ser Ser Glu
                165                 170                 175
Gly Cys Glu Leu Thr Tyr Ser Asn Glu Thr His Thr Ser Cys Arg Cys
            180                 185                 190
Asn His Leu Thr His Phe Ala Ile Leu Met Ser Ser Gly Pro Ser Ile
        195                 200                 205
Gly Ile Lys Asp Tyr Asn Ile Leu Thr Arg Ile Thr Gln Leu Gly Ile
        210                 215                 220
Ile Ile Ser Leu Ile Cys Leu Ala Ile Cys Ile Phe Thr Phe Trp Phe
225                 230                 235                 240
Phe Ser Glu Ile Gln Ser Thr Arg Thr Thr Ile His Lys Asn Leu Cys
                245                 250                 255
Cys Ser Leu Phe Leu Ala Glu Leu Val Phe Leu Val Gly Ile Asn Thr
            260                 265                 270
Asn Thr Asn Lys Leu Phe Cys Ser Ile Ile Ala Gly Leu Leu His Tyr
        275                 280                 285
Phe Phe Leu Ala Ala Phe Ala Trp Met Cys Ile Glu Gly Ile His Leu
        290                 295                 300
Tyr Leu Ile Val Val Gly Val Ile Tyr Asn Lys Gly Phe Leu His Lys
305                 310                 315                 320
Asn Phe Tyr Ile Phe Gly Tyr Leu Ser Pro Ala Val Val Val Gly Phe
                325                 330                 335
```

486

```
Ser Ala Ala Leu Gly Tyr Arg Tyr Tyr Gly Thr Thr Lys Val Cys Trp
            340                     345                 350
Leu Ser Thr Glu Asn Asn Phe Ile Trp Ser Phe Ile Gly Pro Ala Cys
            355                     360                 365
Leu Ile Ile Leu Val Asn Leu Leu Ala Phe Gly Val Ile Ile Tyr Lys
        370                     375                 380
Val Phe Arg His Thr Ala Gly Leu Lys Pro Glu Val Ser Cys Phe Glu
385                     390                 395                 400
Asn Ile Arg Ser Cys Ala Arg Gly Ala Leu Ala Leu Leu Phe Leu Leu
                405                 410                     415
Gly Thr Thr Trp Ile Phe Gly Val Leu His Val Val His Ala Ser Val
            420                     425                 430
Val Thr Ala Tyr Leu Phe Thr Val Ser Asn Ala Phe Gln Gly Met Phe
        435                     440                 445
Ile Phe Leu Phe Leu Cys Val Leu Ser Arg Lys Ile Gln Glu Glu Tyr
450                     455                 460
Tyr Arg Leu Phe Lys Asn Val Pro Cys Cys Phe Gly Cys Leu Arg
465                     470                 475             479
```

```
<210> 884
<211> 143
<212> Amino acid
<213> Homo sapiens
```

```
<400> 884
Gly Thr Arg Glu Ala Ala Pro Ser Arg Phe Met Phe Leu Leu Phe Leu
1                   5                   10                  15
Leu Thr Cys Glu Leu Ala Ala Glu Val Ala Ala Glu Val Glu Lys Ser
            20                  25                  30
Ser Asp Gly Pro Gly Ala Ala Gln Glu Pro Thr Trp Leu Thr Asp Val
        35                  40                  45
Pro Ala Ala Met Glu Phe Ile Ala Ala Thr Glu Val Ala Val Ile Gly
    50                  55                  60
Phe Phe Gln Asp Leu Glu Ile Pro Ala Val Pro Ile Leu His Ser Met
65                  70                  75                  80
Val Gln Lys Phe Pro Gly Val Ser Phe Gly Ile Ser Thr Asp Ser Glu
                85                  90                  95
Val Leu Thr His Tyr Asn Ile Thr Gly Asn Thr Ile Cys Leu Phe Arg
            100                 105                 110
Leu Val Asp Asn Glu Gln Leu Asn Leu Glu Asp Glu Asp Ile Glu Ser
        115                 120                 125
Ile Asp Ala Thr Lys Leu Ser Arg Phe Ile Glu Ile Asn Ser Leu
    130                 135                 140         143
```

```
<210> 885
<211> 52
<212> Amino acid
<213> Homo sapiens
```

```
<400> 885
Asp Glu Thr Ser Gly Leu Ile Val Arg Glu Val Ser Ile Glu Ile Ser
1                   5                   10                  15
Arg Gln Gln Val Glu Glu Leu Phe Gly Pro Glu Asp Tyr Trp Cys Gln
            20                  25                  30
```

487

```
Cys Val Ala Trp Ser Ser Ala Gly Thr Thr Lys Ser Arg Lys Ala Tyr
        35                  40                  45
Val Arg Ile Ala
    50      52
```

```
<210> 886
<211> 40
<212>Amino acid
<213> Homo sapiens
```

```
<400> 886
Gly Thr Arg Ser Ile His Val Lys Leu Asp Val Gly Lys Leu His Thr
1               5               10                  15
Gln Pro Lys Leu Ala Ala Gln Leu Arg Met Val Asp Asp Gly Ser Gly
            20                  25                  30
Lys Val Glu Gly Leu Pro Gly Ile
            35                  40
```

```
<210> 887
<211> 177
<212>Amino acid
<213> Homo sapiens
```

```
<220>
<221> misc_feature
<222> (1)...(177)
<223> X = any amino acid or stop code
```

```
<400> 887
Xaa Cys Gly Glu Asp Gly Ser Phe Thr Gln Val Gln Cys His Thr Tyr
1               5                   10                  15
Thr Gly Tyr Cys Trp Cys Val Thr Pro Asp Gly Lys Pro Ile Ser Gly
            20                  25                  30
Ser Ser Val Gln Asn Lys Thr Pro Val Cys Ser Gly Ser Val Thr Asp
            35                  40                  45
Lys Pro Leu Ser Gln Gly Asn Ser Gly Arg Lys Asp Asp Gly Ser Lys
    50                  55                  60
Pro Thr Pro Thr Met Glu Thr Gln Pro Val Phe Asp Gly Asp Glu Ile
65                  70                  75                  80
Thr Ala Pro Thr Leu Trp Ile Lys His Leu Val Ile Lys Asp Ser Lys
                85                  90                  95
Leu Asn Asn Thr Asn Ile Arg Asn Ser Glu Lys Val Tyr Ser Cys Asp
            100                 105                 110
Gln Glu Arg Gln Ser Ala Leu Glu Glu Ala Gln Gln Asn Pro Arg Glu
            115                 120                 125
Gly Ile Val Ile Pro Glu Cys Ala Pro Gly Gly Leu Tyr Lys Pro Val
            130                 135                 140
Gln Cys His Gln Ser Thr Gly Tyr Cys Trp Cys Val Leu Val Asp Thr
145                 150                 155                 160
Gly Arg Pro Leu Pro Gly Thr Ser Thr Arg Tyr Val Met Pro Ser Xaa
                165                 170                 175 176
*
```

488

```
<210> 888
<211> 48
<212>Amino acid
<213> Homo sapiens
```

```
<400> 888
Val Leu Gln Leu Ile Lys Ser Gln Lys Phe Leu Asn Lys Leu Val Ile
1               5                   10                  15
Leu Val Glu Thr Glu Lys Glu Lys Ile Leu Arg Lys Glu Tyr Val Phe
            20                  25                  30
Ala Asp Ser Lys Val Ser Asp Ser Lys Leu Leu Lys Trp Ala Val Arg
            35                  40                  45      48
```

```
<210> 889
<211> 316
<212>Amino acid
<213> Homo sapiens
```

```
<400> 889
Arg Arg Leu Ser Leu Leu Asp Leu Gln Leu Gly Pro Leu Gly Arg Asp
1               5                   10                  15
Pro Pro Gln Glu Cys Ser Thr Phe Ser Pro Thr Asp Ser Gly Glu Glu
            20                  25                  30
Pro Gly Gln Leu Ser Pro Gly Val Gln Phe Gln Arg Arg Gln Asn Gln
            35                  40                  45
Arg Arg Phe Ser Met Glu Asp Val Ser Lys Arg Leu Ser Leu Pro Met
        50                  55                  60
Asp Ile Arg Leu Pro Gln Glu Phe Leu Gln Lys Leu Gln Met Glu Ser
65                  70                  75                  80
Pro Asp Leu Pro Lys Pro Leu Ser Arg Met Ser Arg Arg Ala Ser Leu
                85                  90                  95
Ser Asp Ile Gly Phe Gly Lys Leu Glu Thr Tyr Val Lys Leu Asp Lys
                100                 105                 110
Leu Gly Glu Gly Thr Tyr Ala Thr Val Phe Lys Gly Arg Ser Lys Leu
            115                 120                 125
Thr Glu Asn Leu Val Ala Leu Lys Glu Ile Arg Leu Glu His Glu Glu
        130                 135                 140
Gly Ala Pro Cys Thr Ala Ile Arg Glu Val Ser Leu Leu Lys Asn Leu
145                 150                 155                 160
Lys His Ala Asn Ile Val Thr Leu His Asp Leu Ile His Thr Asp Arg
                165                 170                 175
Ser Leu Thr Leu Val Phe Glu Tyr Leu Asp Ser Asp Leu Lys Gln Tyr
                180                 185                 190
Leu Asp His Cys Gly Asn Leu Met Ser Met His Asn Val Lys Val Arg
            195                 200                 205
Pro Arg Gly Gln Gly Pro Pro Ile Leu Ala Ala Thr Cys Pro Glu Ala
        210                 215                 220
Gln Cys Gly Asp Pro Leu Ser Pro Pro Gly Ile Arg Leu Leu Arg Trp
225                 230                 235                 240
Leu Lys Pro Ser His Val Gly Lys Arg Glu Arg Ala Met Pro Ser Thr
                245                 250                 255
Ser Pro Gly Thr Gly Leu Ser Ala Leu Pro Gln Glu Gln Thr His Thr
```

```
              260                    265                    270
Val Cys His Cys Leu Ala Val Gly Ile Lys Pro Thr Leu Asn Ser Glu
         275                    280                    285
His Gln Phe Pro Ser Leu Ser Asn Gly Ser Val Ser Tyr Leu Pro Lys
         290                    295                    300
Cys Arg Glu Ala Ser Gly Glu Ala Arg Gly Tyr Glu
305                    310                    315 316
```

```
    <210> 890
    <211> 34
    <212>Amino acid
    <213> Homo sapiens
```

```
    <400> 890
His Glu Arg His Glu Pro Ser Pro Thr Ala Leu Ala Phe Gly Asp His
1               5                    10                    15
Pro Ile Val Gln Pro Lys Gln Leu Ser Phe Lys Ile Ile Gln Val Asn
              20                    25                    30
Asp Asn
    34
```

```
    <210> 891
    <211> 68
    <212>Amino acid
    <213> Homo sapiens
```

```
    <400> 891
Ala Arg Gly Pro Ser Leu Leu Ser Glu Phe His Pro Gly Ser Asp Arg
1               5                    10                    15
Pro Gln Glu Arg Arg Thr Ser Tyr Glu Pro Ile His Pro Gly Pro Ser
              20                    25                    30
Pro Val Asp His Asp Ser Leu Glu Ser Lys Arg Pro Arg Leu Glu Gln
         35                    40                    45
Ala Ser Asp Ser His Tyr Gln Gly His Ile Thr Gly Glu Ser Leu Pro
    50                    55                    60
Gly Arg Val His
65          68
```

```
    <210> 892
    <211> 38
    <212>Amino acid
    <213> Homo sapiens
```

```
    <400> 892
Gly Thr Arg Lys Glu Glu Phe Ser Ala Glu Glu Asn Phe Leu Ile Leu
1               5                    10                    15
Thr Glu Met Ala Thr Asn His Val Gln Val Leu Val Glu Phe Thr Lys
              20                    25                    30
Lys Leu Pro Gly Ile Phe
```

490

                35   38

        <210> 893
        <211> 195
        <212>Amino acid
        <213> Homo sapiens

        <400> 893
His Thr His Lys Leu Val Ala Pro Arg Pro Gly Leu Pro Pro Thr Ser
1   5   10   15
Gln Trp Pro Arg Asp Ala Gly Arg Gln Ala Ser Gly Gly Leu Pro Ser
            20   25   30
Leu Ser Thr Gly Pro Pro Lys Gly Pro Arg Asp Gly Leu Ala Arg Gly
            35   40   45
His Pro Ala Glu Trp Leu Ala Gly Ser Pro Gly Asn Asn Ser Pro Thr
        50   55   60
Gln Gly Ser Leu Pro Pro Gln Leu Asp Leu Tyr Ala Gly Ala Leu Phe
65   70   75   80
Val His Ile Cys Leu Gly Trp Asn Phe Tyr Leu Ser Thr Ile Leu Thr
            85   90   95
Leu Gly Ile Thr Ala Leu Tyr Thr Ile Ala Gly Met Val Pro Ala Ala
            100   105   110
Gly Arg Ser Thr Gln Gly Thr Cys Lys Gly Val Arg Arg Pro Pro Pro
        115   120   125
Pro Thr Gly Pro Arg Glu Gln Pro Arg Lys Trp Pro Gln Gln Glu Pro
    130   135   140
Gln Lys Phe Leu Pro Val Ser Leu Leu Pro Gly Ala Arg Ala Pro Ser
145   150   155   160
Ser Asn Leu Ala Ser Thr Gly Arg Gly Pro Gly Cys Cys Asn Leu His
            165   170   175
Gly Arg Pro Ala Asp Ala His His Gly Gly Gly Gly Cys His Pro Asp
            180   185   190
Asn Gln Arg
        195

        <210> 894
        <211> 87
        <212>Amino acid
        <213> Homo sapiens

        <400> 894
Met Val Asn His Ser Leu Gln Glu Thr Ser Glu Gln Asn Val Ile Leu
1   5   10   15
Gln His Thr Leu Gln Gln Gln Gln Met Leu Gln Gln Glu Thr Ile
            20   25   30
Arg Asn Gly Glu Leu Glu Asp Thr Gln Thr Lys Leu Glu Lys Gln Val
            35   40   45
Ser Lys Leu Glu Gln Glu Leu Gln Lys Gln Arg Glu Ser Ser Ala Glu
        50   55   60
Lys Leu Arg Lys Met Glu Glu Lys Cys Glu Ser Ala Ala His Glu Ala
65   70   75   80
Asp Leu Lys Arg Gln Lys   *
            85 86

                                491

<210> 895
<211> 49
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(49)
<223> X = any amino acid or stop code

<400> 895
Val Cys Pro Lys Trp Cys Arg Phe Leu Thr Met Leu Gly His Cys Cys
1   5   10   15
Tyr Phe Trp His Val Trp Pro Ala Ser Xaa Ala Leu Ser Ala Gly Pro
            20   25   30
Thr Pro Thr Ser Arg Ser Phe Ser Pro Ser Pro Leu Arg Ser Ile Ser
        35   40   45
Thr
49

<210> 896
<211> 128
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(128)
<223> X = any amino acid or stop code

<400> 896
Met Arg Gly Pro Pro Val Leu Leu Leu Gln Ala Ala Pro Met Glu Cys
1   5   10   15
Pro Val Pro Gln Gly Ile Pro Ala Gly Ser Ser Pro Glu Pro Ala Pro
            20   25   30
Asp Pro Pro Gly Pro His Phe Leu Arg Gln Glu Arg Ser Phe Glu Cys
        35   40   45
Arg Met Cys Gly Lys Ala Phe Lys Arg Ser Ser Thr Leu Ser Thr His
    50   55   60
Leu Leu Ile His Ser Asp Thr Arg Pro Tyr Pro Cys Gln Phe Cys Gly
65   70   75   80
Lys Arg Phe His Gln Lys Ser Asp Met Lys Lys His Thr Tyr Ile His
                85   90   95
Thr Gly Glu Lys Pro His Lys Cys Gln Thr Gln Arg Glu Pro Thr Met
                100   105   110
Val Leu Ser Pro Ala Asp Lys Thr Asn Val Lys Ala Ala Trp Xaa *
        115   120   125   127

<210> 897
<211> 57
<212>Amino acid
<213> Homo sapiens

<400> 897
His Glu Gln Leu Thr Asn Asn Thr Ala Thr Ala Pro Ser Ala Thr Pro
1   5   10   15
Val Phe Gly Gln Val Ala Ala Ser Thr Ala Pro Ser Leu Phe Gly Gln
            20   25   30
Gln Thr Gly Ile Thr Ala Ser Thr Ala Val Ala Thr Pro Gln Val Ile
        35   40   45
Ser Ser Arg Phe Ile Asn Leu Asp Phe
    50   55   57

<210> 898
<211> 163
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(163)
<223> X = any amino acid or stop code

<400> 898
Val Ser Val Phe Lys Asn Cys Pro Met Tyr Xaa Ile Cys Ile Phe Leu
1   5   10   15
Thr Lys Met Phe Cys Val Leu Ile Ile Xaa Asn Lys Phe Xaa Val His
            20   25   30
Lys Lys Pro Leu Gln Glu Val Glu Ile Ala Ala Ile Thr His Gly Ala
        35   40   45
Leu Gln Gly Leu Ala Tyr Leu His Ser His Thr Met Ile His Arg Asp
    50   55   60
Ile Lys Ala Gly Asn Ile Leu Leu Thr Glu Pro Gly Gln Val Lys Leu
65   70   75   80
Ala Asp Phe Gly Ser Ala Ser Met Ala Ser Pro Ala Asn Ser Phe Val
            85   90   95
Gly Thr Pro Tyr Trp Met Ala Pro Glu Val Ile Leu Ala Met Asp Glu
            100   105   110
Gly Gln Tyr Asp Gly Lys Val Asp Val Trp Ser Leu Gly Ile Thr Cys
        115   120   125
Ile Glu Leu Ala Glu Arg Lys Pro Pro Leu Phe Asn Met Asn Ala Met
    130   135   140
Ser Ala Leu Tyr His Ile Ala Gln Asn Glu Ser Pro Thr Leu Gln Ser
145   150   155   160
Asn Glu Trp
        163

<210> 899
<211> 352
<212>Amino acid
<213> Homo sapiens

<400> 899

```
Arg His Ala Arg Pro Gly Gly Gly Gly His Ser Asn Gln Arg Lys Met
  1               5               10                  15
Ser Leu Glu Gln Glu Glu Glu Thr Gln Pro Gly Arg Leu Leu Gly Arg
              20              25                  30
Arg Asp Ala Val Pro Ala Phe Ile Glu Pro Asn Val Arg Phe Trp Ile
      35              40                  45
Thr Glu Arg Gln Ser Phe Ile Arg Arg Phe Leu Gln Trp Thr Glu Leu
  50              55                  60
Leu Asp Pro Thr Asn Val Phe Ile Ser Val Glu Ser Ile Glu Asn Ser
 65              70                  75                  80
Arg Gln Leu Leu Cys Thr Asn Glu Asp Val Ser Ser Pro Ala Ser Ala
              85                  90                  95
Asp Gln Arg Ile Gln Glu Ala Trp Lys Arg Ser Leu Ala Thr Val His
          100                 105                 110
Pro Asp Ser Ser Asn Leu Ile Pro Lys Leu Phe Arg Pro Ala Ala Phe
          115                 120                 125
Leu Pro Phe Met Ala Pro Thr Val Phe Leu Ser Met Thr Pro Leu Lys
      130             135                 140
Gly Ile Lys Ser Val Ile Leu Pro Gln Val Phe Leu Cys Ala Tyr Met
145             150                 155                 160
Ala Ala Phe Asn Ser Ile Asn Gly Asn Arg Ser Tyr Thr Cys Lys Pro
              165                 170                 175
Leu Glu Arg Ser Leu Leu Met Ala Gly Ala Val Ala Ser Ser Thr Phe
          180                 185                 190
Leu Gly Val Ile Pro Gln Phe Val Gln Met Lys Tyr Gly Leu Thr Gly
          195                 200                 205
Pro Trp Ile Lys Arg Leu Leu Pro Val Ile Phe Leu Val Gln Ala Ser
      210             215                 220
Gly Met Asn Val Tyr Met Ser Arg Ser Leu Glu Ser Ile Lys Gly Ile
225             230                 235                 240
Ala Val Met Asp Lys Glu Gly Asn Val Leu Gly His Ser Arg Ile Ala
          245                 250                 255
Gly Thr Lys Ala Val Arg Glu Thr Leu Ala Ser Arg Ile Val Leu Phe
          260                 265                 270
Gly Thr Ser Ala Leu Ile Pro Glu Val Phe Thr Tyr Phe Phe Lys Arg
          275                 280                 285
Thr Gln Tyr Phe Arg Lys Asn Pro Gly Ser Leu Trp Ile Leu Lys Leu
  290                 295                 300
Ser Cys Thr Val Leu Ala Met Gly Leu Met Val Pro Phe Ser Phe Ser
305             310                 315                 320
Ile Phe Pro Gln Ile Gly Gln Ile Gln Tyr Cys Ser Leu Glu Glu Lys
              325                 330                 335
Ile Gln Ser Pro Thr Glu Glu Thr Glu Ile Phe Tyr His Arg Gly Val
          340             345                 350         352
```

```
<210> 900
<211> 186
<212>Amino acid
<213> Homo sapiens
```

```
<400> 900
His Ala Ser Gly Arg Leu Glu Val Phe Tyr Asn Gly Thr Trp Gly Ser
  1               5               10                  15
Val Gly Arg Arg Asn Ile Thr Thr Ala Ile Ala Gly Ile Val Cys Arg
              20              25                  30
Gln Leu Gly Cys Gly Glu Asn Gly Val Val Ser Leu Ala Pro Leu Ser
          35              40                  45
```

Lys Thr Gly Ser Gly Phe Met Trp Val Asp Asp Ile Gln Cys Pro Lys
    50   55   60
Thr His Ile Ser Ile Trp Gln Cys Leu Ser Ala Pro Trp Glu Arg Arg
65   70   75   80
Ile Ser Ser Pro Ala Glu Glu Thr Trp Ile Thr Cys Glu Asp Arg Ile
            85   90   95
Arg Val Arg Gly Gly Asp Thr Glu Cys Ser Gly Arg Val Glu Ile Trp
            100   105   110
His Ala Gly Ser Trp Gly Thr Val Cys Asp Asp Ser Trp Asp Leu Ala
            115   120   125
Glu Ala Glu Val Val Cys Gln Gln Leu Gly Cys Gly Ser Ala Leu Ala
    130   135   140
Ala Leu Arg Asp Ala Ser Phe Gly Gln Gly Thr Gly Thr Ile Trp Leu
145   150   155   160
Asp Asp Met Arg Cys Lys Gly Asn Glu Ser Phe Leu Trp Asp Cys His
                165   170   175
Ala Lys Pro Trp Gly Gln Ser Asp Cys Gly
            180   185 186

        <210> 901
        <211> 365
        <212> Amino acid
        <213> Homo sapiens

        <400> 901
Leu Gly Asp Phe Pro Gln Pro Gln Arg Gln Arg Arg Pro Gly Ala Ser
    1   5   10   15
Asp Leu Pro Pro His Leu Ala Gly Ala Arg Gln Trp Glu Val Arg Phe
            20   25   30
Phe Arg His Leu Pro Ala Arg Thr Leu Pro Pro Ser Leu Arg Met Pro
            35   40   45
Glu Gly Pro Glu Leu His Leu Ala Ser Gln Phe Val Asn Glu Ala Cys
    50   55   60
Arg Ala Leu Val Phe Gly Gly Cys Val Glu Lys Ser Ser Val Ser Arg
65   70   75   80
Asn Pro Glu Val Pro Phe Glu Ser Ser Ala Tyr Arg Ile Ser Ala Ser
            85   90   95
Ala Arg Gly Lys Glu Leu Arg Leu Ile Leu Ser Pro Leu Pro Gly Ala
            100   105   110
Gln Pro Gln Gln Glu Pro Leu Ala Leu Val Phe Arg Phe Gly Met Ser
        115   120   125
Gly Ser Phe Gln Leu Val Pro Arg Glu Glu Leu Pro Arg His Ala His
    130   135   140
Leu Arg Phe Tyr Thr Ala Pro Pro Gly Pro Arg Leu Ala Leu Cys Phe
145   150   155   160
Val Asp Ile Arg Arg Phe Gly Arg Trp Asp Leu Gly Gly Lys Trp Gln
                165   170   175
Pro Gly Arg Gly Pro Cys Val Leu Gln Glu Tyr Gln Gln Phe Arg Glu
            180   185   190
Asn Val Leu Arg Asn Leu Ala Asp Lys Ala Phe Asp Arg Pro Ile Cys
            195   200   205
Glu Ala Leu Leu Asp Gln Arg Phe Phe Asn Gly Ile Gly Asn Tyr Leu
    210   215   220
Arg Ala Glu Ile Leu Tyr Arg Leu Lys Ile Pro Pro Phe Glu Lys Ala
225   230   235   240
Arg Ser Val Leu Glu Ala Leu Gln Gln His Arg Pro Ser Pro Glu Leu
                245   250   255
Thr Leu Ser Gln Lys Ile Arg Thr Lys Leu Gln Asn Pro Asp Leu Leu
            260   265   270

```
Glu Leu Cys His Ser Val Pro Lys Glu Val Val Gln Leu Gly Gly Arg
        275                 280                 285
Gly Tyr Gly Ser Glu Ser Gly Glu Glu Asp Phe Ala Ala Phe Arg Ala
        290                 295                 300
Trp Leu Arg Cys Tyr Gly Met Pro Gly Met Ser Ser Leu Gln Asp Arg
305             310                 315                 320
His Gly Arg Thr Ile Trp Phe Gln Gly Asp Pro Gly Pro Leu Ala Pro
            325                 330                 335
Lys Gly Arg Lys Ser Arg Lys Lys Lys Ser Lys Ala Thr Gln Leu Ser
            340                 345                 350
Pro Glu Asp Arg Val Glu Asp Ala Leu Pro Pro Ser Lys
        355             360                 365
```

```
<210> 902
<211> 110
<212>Amino acid
<213> Homo sapiens
```

```
<400> 902
Leu Thr Trp Ser Ala Cys Tyr Trp Arg Asp Ile Leu Arg Ile Gln Leu
1               5                   10                  15
Trp Ile Ala Ala Asp Ile Leu Leu Arg Met Leu Glu Lys Ala Leu Leu
            20                  25                  30
Tyr Ser Glu His Gln Asn Ile Ser Asn Thr Gly Leu Ser Ser Gln Gly
        35                  40                  45
Leu Leu Ile Phe Ala Glu Leu Ile Pro Ala Ile Lys Arg Thr Leu Ala
    50                  55                  60
Arg Leu Leu Val Ile Ile Ala Ser Leu Asp Tyr Gly Ile Glu Lys Pro
65                  70                  75                  80
His Leu Gly Thr Gly Met His Arg Val Ile Gly Leu Met Leu Leu Tyr
            85                  90                  95
Leu Ile Phe Ala Asn Ala Glu Ser Val Ile Arg Val Ile Gly
            100                 105                 110
```

```
<210> 903
<211> 44
<212>Amino acid
<213> Homo sapiens
```

```
<400> 903
Phe Phe Phe Glu Met Glu Ser Arg Ser Ala Ala Gln Ala Gly Val Gln
1               5                   10                  15
Trp Cys Asn Leu Gly Ser Leu Gln Ala Leu Pro Pro Arg Phe Thr Pro
            20                  25                  30
Phe Ser Cys Leu Ser Leu Pro Ser Ser Trp Asp Tyr
        35                  40              44
```

```
<210> 904
<211> 190
<212>Amino acid
<213> Homo sapiens
```

<400> 904

```
Tyr Glu Cys Glu Glu Leu Ala Lys Lys Leu Glu Asn Ser Gln Arg Asp
1               5                   10                  15
Gly Ile Ser Arg Asn Lys Leu Ala Leu Ala Glu Leu Tyr Glu Asp Glu
            20                  25                  30
Val Lys Cys Lys Ser Ser Lys Ser Asn Arg Pro Lys Ala Thr Val Phe
        35                  40                  45
Lys Ser Pro Arg Thr Pro Pro Gln Arg Phe Tyr Ser Ser Glu His Glu
    50                  55                  60
Tyr Ser Gly Leu Asn Ile Val Arg Pro Ser Thr Gly Lys Ile Val Asn
65                  70                  75                  80
Glu Leu Phe Lys Glu Ala Arg Glu His Gly Ala Val Pro Leu Asn Glu
                85                  90                  95
Ala Thr Arg Ala Ser Gly Asp Asp Lys Ser Lys Ser Phe Thr Gly Gly
        100                 105                 110
Gly Tyr Arg Leu Gly Ser Ser Phe Cys Lys Arg Ser Glu Tyr Ile Tyr
    115                 120                 125
Gly Glu Asn Gln Leu Gln Asp Val Gln Ile Leu Leu Lys Leu Trp Ser
    130                 135                 140
Asn Gly Phe Ser Leu Asp Asp Gly Glu Leu Arg Pro Tyr Asn Glu Pro
145                 150                 155                 160
Thr Asn Ala Gln Phe Leu Glu Ser Val Lys Arg Gly Val Thr Leu Ile
            165                 170                 175
Ala Cys Met Pro Glu Ile Gln Gln Leu Met Leu Glu Ile Phe
            180                 185                 190
```

<210> 905
<211> 414
<212>Amino acid
<213> Homo sapiens

<400> 905

```
Trp Pro Cys Gly Ala Ala Pro Gly Leu Thr His Ala Ser Glu Arg Met
1               5                   10                  15
Phe Thr Leu Thr Thr Met Ile Gln Ala Leu Ala Pro Val Met Gly Trp
            20                  25                  30
Asp Arg Lys Pro Leu Lys Met Phe Ser Ser Glu Glu Met Arg Gly His
        35                  40                  45
Leu His His His His Lys Cys Leu Thr Lys Ile Leu Lys Val Glu Gly
    50                  55                  60
Gln Val Pro Asp Leu Pro Ser Cys Leu Pro Leu Thr Asp Asn Thr Arg
65                  70                  75                  80
Met Leu Ala Ser Ile Leu Ile Asn Met Leu Tyr Asp Asp Leu Arg Cys
                85                  90                  95
Asp Pro Glu Arg Asp His Phe Arg Lys Ile Cys Glu Glu Tyr Ile Thr
        100                 105                 110
Gly Lys Phe Asp Pro Gln Asp Met Asp Lys Asn Leu Asn Ala Ile Gln
    115                 120                 125
Thr Val Ser Gly Ile Leu Gln Gly Pro Phe Asp Leu Gly Asn Gln Leu
    130                 135                 140
Leu Gly Leu Lys Gly Val Met Glu Met Met Val Ala Leu Cys Gly Ser
145                 150                 155                 160
Glu Arg Glu Thr Asp Gln Leu Val Ala Val Glu Ala Leu Ile His Ala
            165                 170                 175
Ser Thr Lys Leu Ser Arg Ala Thr Phe Ile Ile Thr Asn Gly Val Ser
            180                 185                 190
```

```
Leu Leu Lys Gln Ile Tyr Lys Thr Thr Lys Asn Glu Lys Ile Lys Ile
        195                     200                 205
Arg Thr Leu Val Gly Leu Cys Lys Leu Gly Ser Ala Gly Gly Thr Asp
    210                 215                 220
Tyr Gly Leu Arg Gln Phe Ala Glu Gly Ser Thr Glu Lys Leu Ala Lys
225                 230                 235                 240
Gln Cys Arg Lys Trp Leu Cys Asn Met Ser Ile Asp Thr Arg Thr Arg
                245                 250                 255
Arg Trp Ala Val Glu Gly Leu Ala Tyr Leu Thr Leu Asp Ala Asp Val
            260                 265                 270
Lys Asp Asp Phe Val Gln Asp Val Pro Ala Leu Gln Ala Met Phe Glu
        275                 280                 285
Leu Ala Lys Thr Ser Asp Lys Thr Ile Leu Tyr Ser Val Ala Thr Thr
    290                 295                 300
Leu Val Asn Cys Thr Asn Ser Tyr Asp Val Lys Glu Val Ile Pro Glu
305                 310                 315                 320
Leu Val Gln Leu Ala Lys Phe Ser Lys Gln His Val Pro Glu Glu His
            325                 330                 335
Pro Lys Asp Lys Lys Asp Phe Ile Asp Met Arg Val Lys Arg Leu Leu
        340                 345                 350
Lys Ala Gly Val Ile Ser Ala Leu Ala Cys Met Val Lys Ala Asp Ser
    355                 360                 365
Ala Ile Leu Thr Asp Gln Thr Lys Glu Leu Leu Ala Arg Val Phe Leu
    370                 375                 380
Ala Leu Cys Asp Asn Pro Lys Asp Arg Gly Thr Ile Val Ala Gln Gly
385                 390                 395                 400
Gly Gly Lys Ala Leu Ile Pro Leu Ala Leu Glu Gly Thr Asp
            405                 410                 414


        <210> 906
        <211> 296
        <212>Amino acid
        <213> Homo sapiens



        <400> 906
Val Asp Ser Val Gly Gly Gly Ser Glu Ser Arg Ser Leu Asp Ser Pro
1               5                   10                  15
Thr Ser Ser Pro Gly Ala Gly Thr Arg Gln Leu Val Lys Ala Ser Ser
            20                  25                  30
Thr Gly Thr Glu Ser Ser Asp Asp Phe Glu Glu Arg Asp Pro Asp Leu
        35                  40                  45
Gly Asp Gly Leu Glu Asn Gly Leu Gly Ser Pro Phe Gly Lys Trp Thr
    50                  55                  60
Leu Ser Ser Ala Ala Gln Thr His Gln Leu Arg Arg Leu Arg Gly Pro
65                  70                  75                  80
Ala Lys Cys Arg Glu Cys Glu Ala Phe Met Val Ser Gly Thr Glu Cys
                85                  90                  95
Glu Glu Cys Phe Leu Thr Cys His Lys Arg Cys Leu Glu Thr Leu Leu
            100                 105                 110
Ile Leu Cys Gly His Arg Arg Leu Pro Ala Arg Thr Pro Leu Phe Gly
    115                 120                 125
Val Asp Phe Leu Gln Leu Pro Arg Asp Phe Pro Glu Glu Val Pro Phe
    130                 135                 140
Val Val Thr Lys Cys Thr Ala Glu Ile Glu His Arg Ala Leu Asp Val
145                 150                 155                 160
Gln Gly Ile Tyr Arg Val Ser Gly Ser Arg Val Arg Val Glu Arg Leu
                165                 170                 175
Cys Gln Ala Phe Glu Asn Gly Arg Ala Leu Val Glu Leu Ser Gly Asn
            180                 185                 190
```

```
Ser Pro His Asp Val Ser Ser Val Leu Lys Arg Phe Leu Gln Glu Leu
        195                 200                 205
Thr Glu Pro Val Ile Pro Phe His Leu Tyr Asp Ala Phe Ile Ser Leu
    210                 215                 220
Ala Lys Thr Leu His Ala Asp Pro Gly Asp Asp Pro Gly Thr Pro Ser
225                 230                 235                 240
Pro Ser Pro Glu Val Ile Arg Ser Leu Lys Thr Leu Leu Val Gln Leu
                245                 250                 255
Pro Asp Ser Asn Tyr Asn Thr Leu Arg His Leu Val Ala His Leu Phe
            260                 265                 270
Arg Val Ala Ala Arg Phe Met Glu Asn Lys Met Ser Ala Asn Asn Leu
        275                 280                 285
Gly Ile Val Phe Gly Pro Thr Leu
290                 295 296
```

```
        <210> 907
        <211> 131
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 907
Gly Leu His Val Ile Ser Leu His Ser Ala Asp Gly Arg His Trp Glu
1                 5                 10                 15
Asp Pro Leu Ser Glu Leu Asp Ser Glu Arg Val Ser Ala Phe Leu Val
            20                 25                 30
Thr Glu Thr Leu Val Phe Tyr Leu Phe Cys Leu Leu Ala Asp Glu Thr
        35                 40                 45
Val Val Pro Pro Asp Val Pro Ser Tyr Leu Ser Ser Gln Gly Thr Leu
    50                 55                 60
Ser Asp Arg Gln Glu Thr Val Val Arg Thr Glu Gly Gly Pro Gln Ala
65                 70                 75                 80
Asn Gly His Ile Glu Ser Asn Gly Lys Ala Ser Val Thr Val Lys Gln
            85                 90                 95
Ser Ser Ala Val Thr Val Ser Leu Gly Ala Gly Gly Gly Leu Gln Val
        100                 105                 110
Phe Thr Gly Gln Val Pro Gly Ile Arg Trp Gly Lys Leu Gly Glu Ala
    115                 120                 125
His Ala Ser
130 131
```

```
        <210> 908
        <211> 124
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 908
Lys Ile Lys His Arg Pro Glu Glu Glu Pro Arg Trp Ala Ala Ala Gly
1                 5                 10                 15
Ala Gln Ser Ala Gly Pro Gly Ala Ala Glu Val Ala Pro Pro Arg Pro
            20                 25                 30
Gly Thr Val Ala Pro Gly Ala Asn Gly Met Thr Asp Ser Ala Thr Ala
        35                 40                 45
Asn Gly Asp Asp Arg Asp Pro Glu Ile Glu Leu Phe Val Lys Ala Gly
    50                 55                 60
```

499

```
Ile Asp Gly Glu Ser Ile Gly Asn Cys Pro Phe Ser Gln Arg Leu Phe
65              70              75                      80
Met Ile Leu Trp Leu Lys Gly Val Val Phe Asn Val Thr Thr Val Asp
                85              90                      95
Leu Lys Arg Lys Pro Ala Asp Leu Arg Asn Leu Ala Pro Gly Thr His
            100             105             110
Pro Pro Phe Leu Ala Phe Asn Trp Tyr Val Lys Thr
            115             120             124
```

```
<210> 909
<211> 111
<212> Amino acid
<213> Homo sapiens
```

```
<400> 909
Leu Gly Phe Ser Asp Gly Gln Glu Ala Arg Pro Glu Glu Ile Gly Trp
1               5               10                      15
Leu Asn Gly Tyr Asn Glu Thr Thr Gly Glu Arg Gly Asp Phe Pro Gly
            20              25              30
Thr Tyr Val Glu Tyr Ile Gly Arg Lys Lys Ile Ser Pro Pro Thr Pro
            35              40              45
Lys Pro Arg Pro Pro Arg Pro Leu Pro Val Ala Pro Gly Ser Ser Lys
    50              55              60
Thr Glu Ala Asp Val Glu Gln Gln Val Leu Tyr Lys Tyr Arg Lys Lys
65              70              75                      80
Pro Ser Ser Ser His Arg Pro Gln Thr Pro His Asn Gly Lys Ser Lys
                85              90                      95
Asn Phe Leu His Lys Gln Gly Leu Lys Lys Lys Lys Ala Ser Leu
            100             105             110 111
```

```
<210> 910
<211> 298
<212> Amino acid
<213> Homo sapiens
```

```
<400> 910
Arg Thr Arg Gly Val Met Glu Leu Ala Leu Arg Arg Ser Pro Val Pro
1               5               10                      15
Arg Trp Leu Leu Leu Leu Pro Leu Leu Leu Gly Leu Asn Ala Gly Ala
                20              25              30
Val Ile Asp Trp Pro Thr Glu Glu Gly Lys Glu Val Trp Asp Tyr Val
            35              40              45
Thr Val Arg Lys Asp Ala Tyr Met Phe Trp Trp Leu Tyr Tyr Ala Thr
    50              55              60
Asn Ser Cys Lys Asn Phe Ser Glu Leu Pro Leu Val Met Trp Leu Gln
65              70              75                      80
Gly Gly Pro Gly Gly Ser Ser Thr Gly Phe Gly Asn Phe Glu Glu Ile
                85              90                      95
Gly Pro Leu Asp Ser Asp Leu Lys Pro Arg Lys Thr Thr Trp Leu Gln
            100             105             110
Ala Ala Ser Leu Leu Phe Val Asp Asn Pro Val Gly Thr Gly Phe Ser
            115             120             125
Tyr Val Asn Gly Ser Gly Ala Tyr Ala Lys Asp Leu Ala Met Val Ala
    130             135             140
```

```
Ser Asp Met Met Gly Leu Leu Lys Thr Phe Phe Ser Cys His Lys Glu
145             150             155             160
Phe Gln Thr Val Pro Phe Tyr Ile Phe Ser Glu Ser Tyr Gly Gly Lys
                165             170             175
Met Ala Ala Gly Ile Gly Leu Glu Leu Tyr Lys Ala Ile Gln Arg Gly
            180             185             190
Thr Ile Lys Cys Asn Phe Ala Gly Val Ala Leu Gly Asp Ser Trp Ile
        195             200             205
Ser Pro Val Asp Ser Val Leu Ser Trp Gly Pro Tyr Leu Tyr Ser Met
    210             215             220
Ser Leu Leu Glu Asp Lys Gly Leu Ala Glu Val Ser Lys Val Ala Glu
225             230             235             240
Gln Val Leu Asn Ala Val Asn Lys Gly Leu Tyr Arg Glu Ala Thr Glu
                245             250             255
Leu Trp Gly Lys Ala Glu Met Ile Ile Glu Gln Val Lys Arg Gly Asn
            260             265             270
Thr Gln Arg Arg Ala Cys Leu Ala Phe Ser Gly Gly Tyr Arg Ala His
        275             280             285
Gly Trp Cys Cys Gln Thr Trp Ser Leu His
290             295             298
```

<210> 911
<211> 213
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(213)
<223> X = any amino acid or stop code

<400> 911
```
Pro Gly Trp Ser Arg Ser Pro Asp Leu Val Ile Arg Leu Pro Arg Pro
1               5               10              15
Pro Lys Val Leu Gly Leu Gln Tyr Tyr His Phe Phe Phe Leu Arg
            20              25              30
Trp Ser Leu Asp Ser Val Ala Gln Ala Glu Val Gln Trp His Asp Leu
        35              40              45
Arg Ser Leu Gln Ala Pro Pro Pro Gly Phe Thr Pro Phe Ser Cys Leu
    50              55              60
Ser Leu Pro Gly Ser Trp Asp Tyr Arg Cys Pro Pro Pro Arg Pro Ala
65              70              75              80
Asn Phe Leu Tyr Phe Xaa Xaa Arg Arg Gly Phe Thr Val Leu Ala Arg
            85              90              95
Met Val Ser Ile Ser Xaa Pro Arg Asp Pro Pro Ala Ser Ala Ser Gln
        100             105             110
Ser Ala Gly Ile Thr Val Leu Ser Leu Phe Phe Phe Glu Met Glu
    115             120             125
Ser Cys Ser Val Ala Gln Ala Gly Val Gln Trp Arg Tyr Leu Gly Ser
    130             135             140
Leu Gln Ala Leu Pro Pro Gly Phe Thr Pro Phe Ser Cys Leu Ser Leu
145             150             155             160
Pro Ser Ser Trp Asp Tyr Arg Arg Pro Pro Pro Arg Pro Ala Asn Phe
                165             170             175
Phe Val Phe Leu Val Glu Thr Gly Val Ser Pro Cys Xaa Pro Gly Trp
            180             185             190
Ser Arg Ser Pro Asp Leu Val Ile Arg Leu Pro Gln Pro Pro Lys Val
    195             200             205
Leu Gly Leu Gln Val
```

210   213

<210> 912
<211> 583
<212>Amino acid
<213> Homo sapiens

<400> 912

Pro	Ser	Met	Lys	Thr	Gly	Glu	Leu	Glu	Lys	Glu	Thr	Ala	Pro	Leu	Arg
1				5					10					15	

Lys	Asp	Ala	Asp	Ser	Ser	Ile	Ser	Val	Leu	Glu	Ile	His	Ser	Gln	Lys
			20				25					30			

Ala	Gln	Ile	Glu	Glu	Pro	Asp	Pro	Pro	Glu	Met	Glu	Thr	Ser	Leu	Asp
		35				40					45				

Ser	Ser	Glu	Met	Ala	Lys	Asp	Leu	Ser	Ser	Lys	Thr	Ala	Leu	Ser	Ser
	50					55					60				

Thr	Glu	Ser	Cys	Thr	Met	Lys	Gly	Glu	Glu	Lys	Ser	Pro	Lys	Thr	Lys
65					70					75					80

Lys	Asp	Lys	Arg	Pro	Pro	Ile	Leu	Glu	Cys	Leu	Glu	Lys	Leu	Glu	Lys
				85					90					95	

Ser	Lys	Lys	Thr	Phe	Leu	Asp	Lys	Asp	Ala	Gln	Arg	Leu	Ser	Pro	Ile
			100					105					110		

Pro	Glu	Glu	Val	Pro	Lys	Ser	Thr	Leu	Glu	Ser	Glu	Lys	Pro	Gly	Ser
		115					120					125			

Pro	Glu	Ala	Ala	Glu	Thr	Ser	Pro	Pro	Ser	Asn	Ile	Ile	Asp	His	Cys
	130					135					140				

Glu	Lys	Leu	Ala	Ser	Glu	Lys	Glu	Val	Val	Glu	Cys	Gln	Ser	Thr	Ser
145					150					155					160

Thr	Val	Gly	Gly	Gln	Ser	Val	Lys	Lys	Val	Asp	Leu	Glu	Thr	Leu	Lys
			165					170					175		

Glu	Asp	Ser	Glu	Phe	Thr	Lys	Val	Glu	Met	Asp	Asn	Leu	Asp	Asn	Ala
			180					185					190		

Gln	Thr	Ser	Gly	Ile	Glu	Glu	Pro	Ser	Glu	Thr	Lys	Gly	Ser	Met	Gln
		195					200					205			

Lys	Ser	Lys	Phe	Lys	Tyr	Lys	Leu	Val	Pro	Glu	Glu	Glu	Thr	Thr	Ala
	210					215					220				

Ser	Glu	Asn	Thr	Glu	Ile	Thr	Ser	Glu	Arg	Gln	Lys	Glu	Gly	Ile	Lys
225					230					235					240

Leu	Thr	Ile	Arg	Ile	Ser	Ser	Arg	Lys	Lys	Lys	Pro	Asp	Ser	Pro	Pro
				245					250					255	

Lys	Val	Leu	Glu	Pro	Glu	Asn	Lys	Gln	Glu	Lys	Thr	Glu	Lys	Glu	Glu
			260					265					270		

Glu	Lys	Thr	Asn	Val	Gly	Arg	Thr	Leu	Arg	Arg	Ser	Pro	Arg	Ile	Ser
		275					280					285			

Arg	Pro	Thr	Ala	Lys	Val	Ala	Glu	Ile	Arg	Asp	Gln	Lys	Ala	Asp	Lys
	290					295					300				

Lys	Arg	Gly	Glu	Gly	Glu	Asp	Glu	Val	Glu	Glu	Glu	Ser	Thr	Ala	Leu
305					310					315					320

Gln	Lys	Thr	Asp	Lys	Lys	Glu	Ile	Leu	Lys	Lys	Ser	Glu	Lys	Asp	Thr
			325					330					335		

Asn	Ser	Lys	Val	Ser	Lys	Val	Lys	Pro	Lys	Gly	Lys	Val	Arg	Trp	Thr
			340					345					350		

Gly	Ser	Arg	Thr	Arg	Gly	Arg	Trp	Lys	Tyr	Ser	Ser	Asn	Asp	Glu	Ser
		355					360					365			

Glu	Gly	Ser	Gly	Ser	Glu	Lys	Ser	Ser	Ala	Ala	Ser	Glu	Glu	Glu	Glu
	370					375					380				

Glu	Lys	Glu	Ser	Glu	Glu	Ala	Ile	Leu	Ala	Asp	Asp	Asp	Glu	Pro	Cys
385					390					395					400

Lys	Lys	Cys	Gly	Leu	Pro	Asn	His	Pro	Glu	Leu	Ile	Leu	Leu	Cys	Asp

```
                    405                 410                 415
Ser Cys Asp Ser Gly Tyr His Thr Ala Leu Pro Phe Ala Pro Pro Leu
            420                 425                 430
Met Ile His Pro Gln Met Gly Gly Trp Phe Cys Pro Thr Phe Cys Pro
            435                 440                 445
Thr Leu Asn Leu Leu Leu Leu Glu Lys Leu Glu Asp Gln Phe Gln Asp
    450                 455                 460
Leu Asp Val Ala Leu Lys Lys Glu Arg Ala Leu Pro Glu Arg Arg Lys
465                 470                 475                 480
Glu Arg Leu Val Tyr Val Gly Ile Ser Ile Glu Asn Ile Ile Pro Pro
                485                 490                 495
Gln Glu Pro Asp Phe Ser Glu Asp Gln Glu Glu Lys Lys Lys Asp Ser
            500                 505                 510
Lys Lys Ser Lys Ala Asn Leu Leu Glu Arg Arg Ser Thr Arg Thr Arg
            515                 520                 525
Lys Cys Ile Ser Tyr Arg Phe Asp Glu Phe Asp Glu Ala Ile Asp Glu
    530                 535                 540
Ala Ile Glu Asp Asp Ile Lys Glu Ala Asp Gly Gly Gly Val Gly Arg
545                 550                 555                 560
Gly Lys Asp Ile Ser Thr Ile Thr Gly His Arg Gly Lys Asp Ile Ser
            565                 570                 575
Thr Ile Leu Asp Glu Glu Arg
            580             583
```


```
        <210> 913
        <211> 178
        <212>Amino acid
        <213> Homo sapiens
```


```
        <400> 913
Lys Arg Arg Gly Ser Phe Lys Met Ala Glu Leu Asp Gln Leu Pro Asp
  1             5                 10                  15
Glu Ser Ser Ser Ala Lys Ala Leu Val Ser Leu Lys Glu Gly Ser Leu
            20                  25                  30
Ser Asn Thr Trp Asn Glu Lys Tyr Ser Ser Leu Gln Lys Thr Pro Val
            35                  40                  45
Trp Lys Gly Arg Asn Thr Ser Ser Ala Val Glu Met Pro Phe Arg Asn
    50                  55                  60
Ser Lys Arg Ser Arg Leu Phe Ser Asp Glu Asp Asp Arg Gln Ile Asn
65                  70                  75                  80
Thr Arg Ser Pro Lys Arg Asn Gln Arg Val Ala Met Val Pro Gln Lys
                85                  90                  95
Phe Thr Ala Thr Met Ser Thr Pro Asp Lys Lys Ala Ser Gln Lys Ile
            100                 105                 110
Gly Phe Arg Leu Arg Asn Leu Leu Lys Leu Pro Lys Ala His Lys Trp
        115                 120                 125
Cys Ile Tyr Glu Trp Phe Tyr Ser Asn Ile Asp Lys Pro Leu Phe Glu
    130                 135                 140
Gly Asp Asn Asp Phe Cys Val Cys Leu Lys Glu Ser Phe Pro Asn Leu
145                 150                 155                 160
Lys Thr Arg Lys Leu Thr Arg Val Glu Trp Gly Lys Ile Arg Arg Leu
                165                 170                 175
Met Gly
    178
```


```
        <210> 914
        <211> 158
        <212>Amino acid
```

<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(158)
<223> X = any amino acid or stop code

<400> 914
```
Met Pro Glu Tyr Leu Arg Lys Arg Phe Gly Gly Ile Arg Ile Pro Ile
1               5                   10                  15
Ile Leu Ala Val Leu Tyr Leu Phe Ile Tyr Ile Phe Thr Lys Ile Ser
            20                  25                  30
Val Asp Met Tyr Ala Gly Ala Ile Phe Ile Gln Gln Ser Leu His Leu
        35                  40                      45
Asp Leu Tyr Leu Ala Ile Val Gly Leu Leu Ala Ile Thr Ala Val Tyr
    50                  55                  60
Thr Val Ala Gly Gly Leu Ala Ala Val Ile Tyr Thr Asp Ala Leu Gln
65                  70                  75                      80
Thr Leu Ile Met Leu Ile Gly Ala Leu Thr Leu Met Gly Tyr Ser Phe
                85                  90                  95
Ala Ala Val Gly Gly Met Glu Gly Leu Lys Glu Lys Tyr Phe Leu Ala
            100                 105                 110
Leu Ala Ser Asn Arg Ser Glu Asn Ser Ser Cys Gly Leu Pro Arg Glu
            115                 120                 125
Asp Ala Phe His Ile Phe Arg Asp Pro Leu Thr Ser Asp Leu Pro Trp
130                 135                 140
Pro Gly Val Leu Phe Gly Met Ser Ile Pro Ser Leu Xaa  *
145                 150                 155     157
```

<210> 915
<211> 108
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(108)
<223> X = any amino acid or stop code

<400> 915
```
Xaa Ser Ala Ser Ala Thr Ser Leu Thr Leu Ser His Cys Val Asp Val
1               5                   10                  15
Val Lys Gly Leu Leu Asp Phe Lys Lys Arg Arg Gly His Ser Ile Gly
            20                  25                  30
Gly Ala Pro Glu Gln Arg Tyr Gln Ile Ile Pro Val Met Cys Cys Ser
        35                  40                  45
Leu Leu Ala Thr Gly Gly Ala Asp Arg Leu Ile His Leu Trp Asn Val
    50                  55                  60
Val Gly Ser Arg Leu Glu Ala Asn Gln Thr Leu Glu Gly Ala Gly Gly
65                  70                  75                      80
Ser Ile Thr Ser Val Asp Phe Asp Pro Ser Gly Tyr Gln Val Leu Ala
                85                  90                  95
Ala Thr Tyr Asn Gln Val Ala Gln Phe Trp Lys  *
            100                 105     107
```

```
<210> 916
<211> 45
<212>Amino acid
<213> Homo sapiens
```

```
<400> 916
Gln Lys Arg Phe Pro Ser Asn Cys Gly Arg Asp Gly Lys Leu Phe Leu
.1               5                   10                  15
Trp Gly Gln Ala Leu His Ile Ile Ala Lys Leu Leu Gly Lys Trp Arg
            20                  25                  30
Arg Leu Gly Met Val Phe Phe Ser Leu Leu Leu Ser Tyr
            35                  40                  45
```

```
<210> 917
<211> 180
<212>Amino acid
<213> Homo sapiens
```

```
<400> 917
Val His Val Cys Ser Ser Lys Met Gly Ala Leu Ser Thr Glu Arg Leu
1               5                   10                  15
Gln Tyr Tyr Thr Gln Glu Leu Gly Val Arg Glu Arg Ser Gly His Ser
            20                  25                  30
Val Ser Leu Ile Asp Leu Trp Gly Leu Leu Val Glu Tyr Leu Leu Tyr
            35                  40                  45
Gln Glu Glu Asn Pro Ala Lys Leu Ser Asp Gln Gln Glu Ala Val Arg
    50                  55                  60
Gln Gly Gln Asn Pro Tyr Pro Ile Tyr Thr Ser Val Asn Val Arg Thr
65                  70                  75                  80
Asn Leu Ser Gly Glu Asp Phe Ala Glu Trp Cys Glu Phe Thr Pro Tyr
                85                  90                  95
Glu Val Gly Phe Pro Lys Tyr Gly Ala Tyr Val Pro Thr Glu Leu Phe
            100                 105                 110
Gly Ser Glu Leu Phe Met Gly Arg Leu Leu Gln Leu Gln Pro Glu Pro
            115                 120                 125
Arg Ile Cys Tyr Leu Gln Gly Met Trp Gly Ser Ala Phe Ala Thr Ser
    130                 135                 140
Leu Asp Glu Ile Phe Leu Lys Thr Ala Gly Ser Gly Leu Ser Phe Leu
145                 150                 155                 160
Glu Trp Tyr Arg Gly Ser Val Asn Ile Thr Asp Asp Cys Gln Lys Pro
            165                 170                 175
Gln Leu His Asn
            180
```

```
<210> 918
<211> 281
<212>Amino acid
<213> Homo sapiens
```

<400> 918
```
Glu Phe Leu Gly Arg Pro Thr Arg Pro Ala Lys Asp Glu Gly Asn Asp
  1               5                  10                  15
Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp
              20                  25                  30
Glu Gly Lys Asp Glu Gly Lys Asp Glu Arg Lys Asp Glu Gly Lys Asp
              35                  40                  45
Glu Gly Lys Asp Glu Arg Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp
      50                  55                  60
Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp
  65                  70                  75                  80
Glu Gly Lys Asp Glu Gly Asn Asp Glu Gly Lys Asp Glu Gly Lys Asp
                  85                  90                  95
Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp
              100                 105                 110
Glu Arg Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp Glu Arg Lys Asp
              115                 120                 125
Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp
              130                 135                 140
Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Asn Asp
145                 150                 155                 160
Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp
              165                 170                 175
Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Asn Asp Glu Gly Asn Asp
              180                 185                 190
Glu Gly Asn Asp Glu Gly Lys Asp Glu Gly Lys Asp Glu Arg Asn Asp
      195                 200                 205
Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp
      210                 215                 220
Glu Arg Asn Asp Glu Gly Lys Asp Glu Arg Lys Asp Glu Gly Lys Asp
225                 230                 235                 240
Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp
              245                 250                 255
Glu Gly Asn Asp Glu Gly Lys Asp Glu Arg Lys Asp Glu Gly Lys Asp
              260                 265                 270
Glu Gly Lys Asp Glu Gly Lys Asp Lys
      275                 280 281
```

<210> 919
<211> 147
<212>Amino acid
<213> Homo sapiens

<400> 919
```
Pro Ser Leu Arg Pro Ala Trp His Glu Gly Glu Asp Phe Ser Tyr Gly
  1               5                  10                  15
Leu Gln Pro Tyr Cys Gly Tyr Ser Phe Gln Val Val Gly Glu Met Ile
              20                  25                  30
Arg Asn Arg Glu Val Leu Pro Cys Pro Asp Asp Cys Pro Ala Trp Ala
          35                  40                  45
Tyr Ala Leu Met Ile Glu Gly Trp Asn Glu Phe Pro Ser Arg Arg Ala
      50                  55                  60
Arg Phe Lys Asp Ile His Ser Arg Leu Arg Ala Trp Gly Asn Leu Ser
  65                  70                  75                  80
Asn Tyr Asn Ser Ser Glu Gln Thr Ser Gly Gly Arg Asn Thr Thr Gln
                  85                  90                  95
Thr Ser Ser Leu Ser Thr Ser Pro Leu Cys Asn Val Ser Asn Ala Pro
              100                 105                 110
Tyr Val Gly Pro Lys Gln Lys Val Pro Pro Phe Pro Gln Thr Gln Val
```

```
                115                   120                    125
Ile Pro Met Lys Gly Gln Ile Arg Pro Met Val Pro Pro Pro Gln Leu
        130                   135                    140
Tyr Val Pro
145        147
```

```
        <210> 920
        <211> 150
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 920
Arg Asn Ser Gly Arg His Pro Arg Val Arg Trp Ile Leu Glu Glu Arg
1                   5                   10                   15
Lys Arg Val Met Gln Glu Ala Cys Ala Lys Tyr Arg Ala Ser Ser Ser
            20                  25                  30
Arg Arg Ala Val Thr Pro Arg His Val Ser Arg Ile Phe Val Glu Asp
        35                  40                  45
Arg His Arg Val Leu Tyr Cys Glu Val Pro Lys Ala Gly Cys Ser Asn
    50                  55                  60
Trp Lys Arg Val Leu Met Val Leu Ala Gly Leu Ala Ser Ser Thr Ala
65                  70                  75                  80
Asp Ile Gln His Asn Thr Val His Tyr Gly Ser Ala Leu Lys Arg Leu
            85                  90                  95
Asp Thr Phe Asp Arg Gln Gly Ile Leu His Arg Leu Ser Thr Tyr Thr
        100                 105                 110
Lys Met Leu Phe Val Arg Glu Pro Phe Glu Arg Leu Val Ser Ala Phe
    115                 120                 125
Arg Asp Lys Phe Glu His Pro Asn Ser Tyr Tyr His Pro Val Phe Cys
    130                 135                 140
Met Ala Ile Leu Ala Arg
145                 150
```

```
        <210> 921
        <211> 125
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 921
Ile Met Tyr Ser Ile Ser Pro Ala Asn Ser Glu Glu Gly Gln Glu Leu
1                   5                   10                   15
Tyr Val Cys Thr Val Lys Asp Asp Val Asn Leu Asp Thr Val Leu Leu
            20                  25                  30
Leu Pro Phe Leu Lys Glu Ile Ala Val Ser Gln Leu Asp Gln Leu Ser
        35                  40                  45
Pro Glu Glu Gln Leu Leu Val Lys Cys Ala Ala Ile Ile Gly His Ser
    50                  55                  60
Phe His Ile Asp Leu Leu Gln His Leu Leu Pro Gly Trp Asp Lys Asn
65                  70                  75                  80
Lys Leu Leu Gln Val Leu Arg Ala Leu Val Asp Ile His Val Leu Cys
            85                  90                  95
Trp Ser Asp Lys Ser Gln Glu Leu Pro Ala Glu Pro Ile Leu Met Pro
        100                 105                 110
Ser Ser Ile Asp Ile Ile Asp Gly Thr Lys Glu Lys Lys
```

507

             . 115   120   125

        <210> 922
        <211> 111
        <212>Amino acid
        <213> Homo sapiens

        <400> 922
Gly Pro His Val Val Leu Val Leu Arg Arg Cys Phe Leu Leu Ser Tyr
1   5   10   15
Phe Lys Gly Val Glu Lys Ala Lys Ala Met Pro Ser Pro Arg Ile Leu
            20   25   30
Lys Thr His Leu Ser Thr Gln Leu Leu Pro Pro Ser Phe Trp Glu Asn
        35   40   45
Asn Cys Lys Val Arg Tyr Gln Gln Leu Pro Val Thr Glu Gly Lys Val
    50   55   60
Ser Gln Pro Lys Arg Val Leu Gln Thr Pro Thr Gln Ser Ile Arg Asp
65   70   75   80
His Leu Cys Leu Ser Thr Val Ser Asp Ala Tyr Gln Gln Arg Glu Asn
            85   90   95
Ile Lys Phe Tyr Ile Gln Gln Asp Ile His Leu Asn Ser Phe Lys
            100   105   110 111

        <210> 923
        <211> 69
        <212>Amino acid
        <213> Homo sapiens

        <400> 923
Phe Tyr Tyr Ile Cys Arg Leu Ser Lys Glu Asp Lys Ala Phe Leu Trp
1   5   10   15
Glu Lys Arg Tyr Tyr Cys Phe Lys His Pro Asn Cys Leu Pro Lys Ile
            20   25   30
Leu Ala Ser Ala Pro Asn Trp Lys Trp Val Asn Leu Ala Lys Thr Tyr
        35   40   45
Ser Leu Leu His Gln Trp Pro Ala Leu Tyr Pro Leu Ile Ala Leu Glu
    50   55   60
Leu Leu Asp Ser Lys
65   69

        <210> 924
        <211> 120
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(120)
        <223> X = any amino acid or stop code

<400> 924
Lys Met Met Ile Xaa Gly Leu Phe Glu Ile Gln Gln Cys Pro Ile Gly
1   5   10   15
Lys His Cys Asn Phe Leu Gln Val Leu Arg Asn Pro Asn Arg Asp Leu
            20   25   30
Trp Leu Val Ser Ser Phe Gly Lys Ser Ser Lys Gly Arg Glu Arg Met
        35   40   45
Gly His His Asp Glu Tyr Tyr Arg Leu Arg Gly Arg His Asn Pro Ser
    50   55   60
Pro Asp His Ser Tyr Lys Arg Asn Gly Glu Ser Glu Arg Lys Arg Lys
65   70   75   80
Lys Ser His Xaa His Met Ser Lys Ser Gln Glu Arg His Asn Ser Pro
                85   90   95
Ser Arg Gly Arg Asn Ser Asp Arg Ser Gly Gly Arg Cys Ser Arg Ser
        100   105   110
Asp Asn Gly Arg Ser Arg Tyr Arg
        115   120

<210> 925
<211> 108
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(108)
<223> X = any amino acid or stop code

<400> 925
Pro Leu Ser Leu Phe Ala Arg Val Ala Gly Ser Arg Val Glu Met Pro
1   5   10   15
Glu Pro Pro Gly Leu Gly Asp Glu Gly Arg Pro Leu Leu His Pro Gly
            20   25   30
Arg Arg Glu Ala Val Gly Ser Trp Val Ser Ala Phe Ala Gly Asp Ser
        35   40   45
Thr Pro Cys Gly Pro Gly Asp Leu Ser Val Pro Arg Arg Glu Pro Phe
    50   55   60
Arg Leu Thr Ala Leu Xaa Pro His Arg Ser Pro Val Val Arg Thr Ser
65   70   75   80
Leu Ile Gly Leu Leu Leu Gly Phe Ser Val Lys Glu Glu Leu Arg Gly
                85   90   95
Val Gly Trp Ala Ala Arg Thr Pro Leu Gly Ile Arg
        100   105   108

<210> 926
<211> 305
<212>Amino acid
<213> Homo sapiens

<400> 926
Phe Asp Lys Arg Gln His Glu Ala Arg Ile Gln Gln Met Glu Asn Glu
1   5   10   15
Ile His Tyr Leu Gln Glu Asn Leu Lys Ser Met Glu Glu Ile Gln Gly

```
                    20                    25                    30
Leu Thr Asp Leu Gln Leu Gln Glu Ala Asp Glu Glu Lys Glu Arg Ile
            35                    40                    45
Leu Ala Gln Leu Arg Glu Leu Glu Lys Lys Lys Lys Leu Glu Asp Ala
        50                    55                    60
Lys Ser Gln Glu Gln Val Phe Gly Leu Asp Lys Glu Leu Lys Lys Leu
65                    70                    75                    80
Lys Lys Ala Val Ala Thr Ser Asp Lys Leu Ala Thr Ala Glu Leu Thr
                85                    90                    95
Ile Ala Lys Asp Gln Leu Lys Ser Leu His Gly Thr Val Met Lys Ile
            100                   105                   110
Asn Gln Glu Arg Ala Glu Glu Leu Gln Glu Ala Glu Arg Phe Ser Arg
        115                   120                   125
Lys Ala Ala Gln Ala Ala Arg Asp Leu Thr Arg Ala Glu Ala Glu Ile
        130                   135                   140
Glu Leu Leu Gln Asn Leu Leu Arg Gln Lys Gly Glu Gln Phe Arg Leu
145                   150                   155                   160
Glu Met Glu Lys Thr Gly Val Gly Thr Gly Ala Asn Ser Gln Val Leu
                165                   170                   175
Glu Ile Glu Lys Leu Asn Glu Thr Met Glu Arg Gln Arg Thr Glu Ile
            180                   185                   190
Ala Arg Leu Gln Asn Val Leu Tyr Leu Thr Gly Ser Asp Asn Lys Gly
            195                   200                   205
Gly Phe Glu Asn Val Leu Glu Glu Ile Ala Glu Leu Arg Arg Glu Gly
    210                   215                   220
Ser Tyr Gln Asn Asp Tyr Ile Ser Ser Met Ala Asp Pro Phe Lys Arg
225                   230                   235                   240
Arg Gly Tyr Trp Tyr Phe Met Pro Pro Pro Ser Ser Lys Val Ser
                245                   250                   255
Ser His Ser Ser Gln Ala Thr Lys Asp Ser Gly Val Gly Leu Lys Tyr
            260                   265                   270
Ser Ala Ser Thr Pro Val Arg Lys Pro Arg Pro Gly Gln Gln Asp Gly
            275                   280                   285
Lys Glu Gly Ser Gln Pro Pro Pro Ala Ser Gly Tyr Trp Val Tyr Ser
    290                   295                   300
Pro
305
```

```
        <210> 927
        <211> 303
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 927
Ser Asp Ala Ser Ser Phe Lys Thr Arg Val Ile Val Val Pro Arg Pro
1               5                   10                    15
Arg Val Phe Pro Leu Gly Ser Ala Ile Thr Glu Asn Ser Leu Glu Ser
            20                    25                    30
Asp Ser Gln Ile Gly Gln Phe Gly Val Gly Phe Tyr Ser Ala Phe Leu
        35                    40                    45
Val Ala Asp Lys Val Ile Val Thr Ser Lys His Asn Asn Asp Thr Gln
    50                    55                    60
His Ile Trp Glu Ser Asp Ser Asn Glu Phe Ser Val Ile Ala Asp Pro
65                    70                    75                    80
Arg Gly Asn Thr Leu Gly Arg Gly Thr Thr Ile Thr Leu Val Leu Lys
                85                    90                    95
Glu Glu Ala Ser Asp Tyr Leu Glu Leu Asp Thr Ile Lys Asn Leu Val
            100                   105                   110
Lys Lys Tyr Ser Gln Phe Ile Asn Phe Pro Ile Tyr Val Trp Ser Ser
```

```
              115                    120                    125
Lys Thr Glu Thr Val Glu Glu Pro Met Glu Glu Glu Glu Ala Ala Lys
        130                    135                    140
Glu Glu Lys Glu Glu Ser Asp Asp Glu Ala Ala Val Glu Glu Glu Glu
145                    150                    155                    160
Glu Glu Lys Lys Pro Lys Thr Lys Lys Val Glu Lys Thr Val Trp Asp
                165                    170                    175
Trp Glu Leu Met Asn Asp Ile Lys Pro Ile Trp Gln Arg Pro Ser Lys
                180                    185                    190
Glu Val Glu Glu Asp Glu Tyr Lys Ala Phe Tyr Lys Ser Phe Ser Lys
        195                    200                    205
Glu Ser Asp Asp Pro Met Ala Tyr Ile His Phe Thr Ala Glu Gly Glu
        210                    215                    220
Val Thr Phe Lys Ser Ile Leu Phe Val Pro Thr Ser Ala Pro Arg Gly
225                    230                    235                    240
Leu Phe Asp Glu Tyr Gly Ser Lys Lys Ser Asp Tyr Ile Lys Leu Tyr
                245                    250                    255
Val Arg Arg Val Phe Ile Thr Asp Asp Phe His Asp Met Met Pro Lys
        260                    265                    270
Tyr Leu Asn Phe Val Lys Gly Val Val Asp Ser Asp Asp Leu Pro Leu
        275                    280                    285
Asn Val Ser Arg Glu Thr Leu Gln Gln His Lys Leu Leu Lys Val
        290                    295                    300        303
```

<210> 928
<211> 147
<212>Amino acid
<213> Homo sapiens

<400> 928
```
Cys Gly Ser Trp Met Arg Arg Ala Leu Ile Pro Pro Cys Arg Gly Gly
 1               5                  10                  15
Pro Ser Ala Ser Asp Arg Cys Cys Ser Cys Ser Pro Ser Gly Phe Ser
            20                  25                  30
Ala Gly Arg Gly Arg Cys Pro Val Gln Gly Cys Leu Arg Pro His Arg
        35                  40                  45
Val Gln Leu Leu Arg Arg Trp Gly Pro Gly Ser Pro Ala Gly Gln Arg
    50                  55                  60
Leu Ser Lys Gly Phe Gln Leu Leu Arg Trp Trp Gly Pro Gly Ser Pro
65                  70                  75                  80
Ala Pro Glu Pro Arg Lys Gly Pro Phe Pro Pro Pro Asp Pro Pro Trp
            85                  90                  95
Pro Val Thr Ala Val Thr Val Met Ala Gly Ser Val Pro Ser Ala Gln
            100                 105                 110
Ser Val Asp Ala Leu Glu Ser Pro Gly Pro Leu Ala Leu Glu Gly Pro
        115                 120                 125
Ser Ser Pro Arg Asn Leu Leu Trp Arg Glu Met Ser Ile Phe Leu Pro
        130                 135                 140
Gly Ile Phe
145     147
```

<210> 929
<211> 183
<212>Amino acid
<213> Homo sapiens

<400> 929
Pro Gly Pro Thr Pro Pro Pro Arg His Gly Ser Pro Pro His Arg Leu
1   5   10   15
Ile Arg Val Glu Thr Pro Gly Pro Pro Ala Pro Pro Ala Asp Glu Arg
            20   25   30
Ile Ser Gly Pro Pro Ala Ser Ser Asp Arg Leu Ala Ile Leu Glu Asp
            35   40   45
Tyr Ala Asp Pro Phe Asp Val Gln Glu Thr Gly Glu Gly Ser Ala Gly
    50   55   60
Ala Ser Gly Ala Pro Glu Lys Val Pro Glu Asn Asp Gly Tyr Met Glu
65   70   75   80
Pro Tyr Glu Ala Gln Lys Met Met Ala Glu Ile Arg Gly Ser Lys Glu
                85   90   95
Thr Ala Thr Gln Pro Leu Pro Leu Tyr Asp Thr Pro Tyr Glu Pro Glu
            100   105   110
Glu Asp Gly Ala Thr Pro Glu Gly Glu Gly Ala Pro Trp Pro Arg Glu
            115   120   125
Ser Arg Leu Pro Glu Asp Asp Glu Arg Pro Pro Glu Glu Tyr Asp Gln
        130   135   140
Pro Trp Glu Trp Lys Lys Glu Arg Ile Ser Lys Ala Phe Ala Val Asp
145   150   155   160
Ile Lys Val Ile Lys Asp Leu Pro Trp Pro Pro Pro Val Gly Gln Leu
                165   170   175
Asp Ser Ser Pro Ser Leu Pro
                180   183

    <210> 930
    <211> 187
    <212>Amino acid
    <213> Homo sapiens

    <400> 930
Gln Phe Phe Ser Leu Phe Leu Arg Tyr Gln Ile His Thr Gly Leu Gln
1   5   10   15
His Ser Ile Ile Arg Pro Thr Gln Pro Asn Cys Leu Pro Leu Asp Asn
            20   25   30
Ala Thr Leu Pro Gln Lys Leu Lys Glu Val Gly Tyr Ser Thr His Met
        35   40   45
Val Gly Lys Trp His Leu Gly Phe Tyr Arg Lys Glu Cys Met Pro Thr
    50   55   60
Arg Arg Gly Phe Asp Thr Phe Phe Gly Ser Leu Leu Gly Ser Gly Asp
65   70   75   80
Tyr Tyr Thr His Tyr Lys Cys Asp Ser Pro Gly Met Cys Gly Tyr Asp
                85   90   95
Leu Tyr Glu Asn Asp Asn Ala Ala Trp Asp Tyr Asp Asn Gly Ile Tyr
            100   105   110
Ser Thr Gln Met Tyr Thr Gln Arg Val Gln Gln Ile Leu Ala Ser His
        115   120   125
Asn Pro Thr Lys Pro Ile Phe Leu Tyr Ile Ala Tyr Gln Ala Val His
    130   135   140
Ser Pro Leu Gln Ala Pro Gly Arg Tyr Phe Glu His Tyr Arg Ser Ile
145   150   155   160
Ile Asn Ile Asn Arg Arg Arg Tyr Ala Ala Met Leu Ser Cys Leu Asp
                165   170   175
Glu Ala Ile Asn Asn Val Thr Leu Ala Leu Lys
            180   185   187

512

<210> 931
<211> 192
<212>Amino acid
<213> Homo sapiens

<400> 931

```
Arg Val Arg Lys Gly Arg Gly Gly Glu Arg Leu Gln Ser Pro Leu Arg
1               5                   10                  15
Val Pro Gln Lys Pro Glu Arg Pro Pro Leu Pro Pro Lys Pro Gln Phe
            20                  25                  30
Leu Asn Ser Gly Ala Tyr Pro Gln Lys Pro Leu Arg Asn Gln Gly Val
        35                  40                  45
Val Arg Thr Leu Ser Ser Ser Ala Gln Glu Asp Ile Ile Arg Trp Phe
    50                  55                  60
Lys Glu Glu Gln Leu Pro Leu Arg Ala Gly Tyr Gln Lys Thr Ser Asp
65                  70                  75                  80
Thr Ile Ala Pro Trp Phe His Gly Ile Leu Thr Leu Lys Lys Ala Asn
                85                  90                  95
Glu Leu Leu Leu Ser Thr Gly Met Pro Gly Ser Phe Leu Ile Arg Val
            100                 105                 110
Ser Glu Arg Ile Lys Gly Tyr Ala Leu Ser Tyr Leu Ser Glu Asp Gly
        115                 120                 125
Cys Lys His Phe Leu Ile Asp Ala Ser Ala Asp Ala Tyr Ser Phe Leu
    130                 135                 140
Gly Val Asp Gln Leu Gln His Ala Thr Leu Ala Asp Leu Val Glu Tyr
145                 150                 155                 160
His Lys Glu Glu Pro Ile Thr Ser Leu Gly Lys Glu Leu Leu Leu Tyr
                165                 170                 175
Pro Cys Gly Gln Gln Asp Gln Leu Pro Asp Tyr Leu Glu Leu Phe Glu
            180                 185                 190     192
```


<210> 932
<211> 545
<212>Amino acid
<213> Homo sapiens

<400> 932

```
Gly Ser Leu Glu Lys Ala Leu Phe Gln Leu Leu Lys Val Trp Gly Gln
1               5                   10                  15
Trp Ala Glu Gln Thr Arg Arg Leu Gln Arg Leu Asp Val Ser Leu Ser
            20                  25                  30
Val Ala Arg Val Arg Ser Ala Gly Pro Ser Cys Gln Asn Lys Gly Asp
        35                  40                  45
Leu Val Met Glu Ala Leu Leu Glu Gly Ile Gln Asn Arg Gly His Gly
    50                  55                  60
Gly Gly Phe Leu Thr Ser Cys Glu Ala Glu Leu Gln Glu Leu Met Lys
65                  70                  75                  80
Gln Ile Asp Ile Met Val Ala His Lys Lys Ser Glu Trp Glu Gly Arg
                85                  90                  95
Thr His Ala Leu Glu Thr Cys Leu Lys Ile Arg Glu Gln Glu Leu Lys
            100                 105                 110
Ser Leu Arg Ser Gln Leu Asp Val Thr His Lys Glu Val Gly Met Leu
```

```
                   115                        120                        125
His Gln Gln Val Glu Glu His Glu Lys Ile Lys Gln Glu Met Thr Met
      130                        135                        140
Glu Tyr Lys Gln Glu Leu Lys Lys Leu His Glu Glu Leu Cys Ile Leu
145                        150                        155                        160
Lys Arg Ser Tyr Glu Lys Leu Gln Lys Lys Gln Met Arg Glu Phe Arg
                   165                        170                        175
Gly Asn Thr Lys Asn His Arg Glu Asp Arg Ser Glu Ile Glu Arg Leu
                   180                        185                        190
Thr Ala Lys Ile Glu Glu Phe Arg Gln Lys Ser Leu Asp Trp Glu Lys
              195                        200                        205
Gln Arg Leu Ile Tyr Gln Gln Gln Val Ser Ser Leu Glu Ala Gln Arg
      210                        215                        220
Lys Ala Leu Ala Glu Gln Ser Glu Ile Ile Gln Ala Gln Leu Val Asn
225                        230                        235                        240
Arg Lys Gln Lys Leu Glu Ser Val Glu Leu Ser Ser Gln Ser Glu Ile
                   245                        250                        255
Gln His Leu Ser Ser Lys Leu Glu Arg Ala Asn Asp Thr Ile Cys Ala
              260                        265                        270
Asn Glu Leu Glu Ile Glu Arg Leu Thr Met Arg Val Asn Asp Leu Val
              275                        280                        285
Gly Thr Ser Met Thr Val Leu Gln Glu Gln Gln Gln Lys Glu Glu Lys
      290                        295                        300
Leu Arg Glu Ser Glu Lys Leu Leu Glu Ala Leu Gln Glu Glu Lys Arg
305                        310                        315                        320
Glu Leu Lys Ala Ala Leu Gln Ser Gln Glu Asn Leu Ile His Glu Ala
              325                        330                        335
Arg Ile Gln Lys Glu Lys Leu Gln Glu Lys Val Lys Ala Thr Asn Thr
              340                        345                        350
Gln His Ala Val Glu Ala Ile Ser Leu Glu Ser Val Ser Ala Thr Cys
      355                        360                        365
Lys Gln Leu Ser Gln Glu Leu Met Glu Lys Tyr Glu Glu Leu Lys Arg
      370                        375                        380
Met Glu Ala His Asn Asn Glu Tyr Lys Ala Glu Ile Lys Lys Leu Lys
385                        390                        395                        400
Glu Gln Ile Leu Gln Gly Glu Gln Ser Tyr Ser Ser Ala Leu Glu Gly
                   405                        410                        415
Met Lys Met Glu Ile Ser His Leu Thr Gln Glu Leu His Gln Arg Asp
              420                        425                        430
Ile Thr Ile Ala Ser Thr Lys Gly Ser Ser Ser Asp Met Glu Lys Arg
              435                        440                        445
Leu Arg Ala Glu Met Gln Lys Ala Glu Asp Lys Ala Val Glu His Lys
      450                        455                        460
Glu Ile Leu Asp Gln Leu Glu Ser Leu Lys Leu Glu Asn Arg His Leu
465                        470                        475                        480
Ser Glu Met Val Met Lys Leu Glu Leu Gly Leu His Glu Cys Ser Leu
              485                        490                        495
Pro Val Ser Pro Leu Gly Ser Ile Ala Thr Arg Phe Leu Glu Glu Glu
              500                        505                        510
Glu Leu Arg Ser His His Ile Leu Glu Arg Leu Asp Ala His Ile Glu
      515                        520                        525
Glu Leu Lys Arg Glu Ser Glu Lys Thr Val Arg Gln Phe Thr Ala Leu
      530                        535                        540
Lys
545
```

```
    <210> 933
    <211> 297
    <212> Amino acid
    <213> Homo sapiens
```

```
      <400> 933
Thr Gly Phe Leu Gly Trp Ser Gln Gly Pro Ser Leu Thr Pro Thr Ser
1               5                   10                  15
Leu Ser Ala Leu Tyr Pro Ser Gln Val Glu Glu Thr Gly Val Val Leu
            20                  25                  30
Ser Leu Glu Gln Thr Glu Gln His Ser Arg Arg Pro Ile Gln Arg Gly
        35                  40                  45
Ala Pro Ser Gln Lys Asp Thr Pro Asn Pro Gly Asp Ser Leu Asp Thr
    50                  55                  60
Pro Gly Pro Arg Ile Leu Ala Phe Leu His Pro Pro Ser Leu Ser Glu
65                  70                  75                  80
Ala Ala Leu Ala Ala Asp Pro Arg Arg Phe Cys Ser Pro Asp Leu Arg
            85                  90                  95
Arg Leu Leu Gly Pro Ile Leu Asp Gly Ala Ser Val Ala Ala Thr Pro
            100                 105                 110
Ser Thr Pro Leu Ala Thr Arg His Pro Gln Ser Pro Leu Ser Ala Asp
        115                 120                 125
Leu Pro Asp Glu Leu Pro Val Gly Thr Glu Asn Val His Arg Leu Phe
    130                 135                 140
Thr Ser Gly Lys Asp Thr Glu Ala Val Glu Thr Asp Leu Asp Ile Ala
145                 150                 155                 160
Gln Asp Ala Asp Ala Leu Asp Leu Glu Met Leu Ala Pro Tyr Ile Ser
                165                 170                 175
Met Asp Asp Asp Phe Gln Leu Asn Ala Ser Glu Gln Leu Pro Arg Ala
            180                 185                 190
Tyr His Arg Pro Leu Gly Ala Val Pro Arg Pro Arg Ala Arg Ser Phe
        195                 200                 205
His Gly Leu Ser Pro Pro Ala Leu Glu Pro Ser Leu Leu Pro Arg Trp
    210                 215                 220
Gly Ser Asp Pro Arg Leu Ser Cys Ser Ser Pro Ser Arg Gly Asp Pro
225                 230                 235                 240
Ser Ala Ser Ser Pro Met Ala Gly Ala Arg Lys Arg Thr Leu Ala Gln
                245                 250                 255
Ser Ser Lys Asp Glu Asp Glu Gly Val Glu Leu Leu Gly Val Arg Pro
            260                 265                 270
Pro Lys Arg Ser Pro Ser Pro Glu His Glu Asn Phe Leu Leu Phe Pro
        275                 280                 285
Leu Ser Leu Ser Phe Leu Leu Thr Gly
    290                 295     297


      <210> 934
      <211> 140
      <212>Amino acid
      <213> Homo sapiens




      <400> 934
Glu Leu Gln Asp Cys Phe Asp Val His Asp Ala Ser Trp Glu Glu Gln
1               5                   10                  15
Ile Phe Trp Gly Trp His Asn Asp Val His Ile Phe Asp Thr Lys Thr
            20                  25                  30
Gln Thr Trp Phe Gln Pro Glu Ile Lys Gly Gly Val Pro Pro Gln Pro
        35                  40                  45
Arg Ala Ala His Thr Cys Ala Val Leu Gly Asn Lys Gly Tyr Ile Phe
    50                  55                  60
Gly Gly Arg Val Leu Gln Thr Arg Met Asn Asp Leu His Tyr Leu Asn
65                  70                  75                  80
Leu Asp Thr Trp Thr Trp Ser Gly Arg Ile Thr Ile Asn Gly Glu Ser
```

```
                     85                    90                      95
Pro Lys His Arg Ser Trp His Thr Leu Thr Pro Ile Ala Asp Asp Lys
              100                     105                     110
Leu Phe Leu Cys Gly Gly Leu Asn Ala Tyr Asn Met Pro Leu Ser Asp
              115                     120                     125
Gly Trp Ile His Asn Val Thr Thr His Cys Trp Lys
              130                     135                     140
```

```
        <210> 935
        <211> 97
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 935
Phe Phe Phe Leu Arg Thr Arg Ser His Ser Val Thr Pro Arg Trp Glu
 1                   5                  10                      15
Cys Ser Asp Asp Ile Thr Ala His Trp Gln Pro Gln Pro Trp Gly Ser
              20                     25                      30
Ser Asp Pro Leu Thr Phe Ser Arg Pro Gln Val Val Val Pro Pro Arg
           35                     40                     45
His Thr Thr Leu Cys Pro Ala Asn Phe Phe Val Phe Cys Ile Phe Cys
        50                     55                      60
Arg Asn Arg Ile Ser Pro Cys Trp Pro Gly Trp Ser Arg Thr Pro Trp
65                     70                      75                      80
Ala Gln Leu Ile Arg Leu Pro Arg Pro Pro Lys Val Leu Gly Leu Gln
              85                     90                      95
Val
97
```

```
        <210> 936
        <211> 245
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 936
Pro Arg Glu Gly Gln Val Lys Gln Gly Leu Leu Gly Asp Cys Trp Phe
 1                   5                  10                      15
Leu Cys Ala Cys Ala Ala Leu Gln Lys Ser Arg His Leu Leu Asp Gln
              20                     25                      30
Val Ile Pro Pro Gly Gln Pro Ser Trp Ala Asp Gln Glu Tyr Arg Gly
           35                     40                     45
Ser Phe Thr Cys Arg Ile Trp Gln Phe Gly Arg Trp Val Glu Val Thr
        50                     55                      60
Thr Asp Asp Arg Leu Pro Cys Leu Ala Gly Arg Leu Cys Phe Ser Arg
65                     70                      75                      80
Cys Gln Arg Glu Asp Val Phe Trp Leu Pro Leu Leu Glu Lys Val Tyr
              85                     90                      95
Ala Lys Val His Gly Ser Tyr Glu His Leu Trp Ala Gly Gln Val Ala
              100                    105                     110
Asp Ala Leu Val Asp Leu Thr Gly Gly Leu Ala Glu Arg Trp Asn Leu
           115                    120                     125
Lys Gly Val Ala Gly Ser Gly Gln Gln Asp Arg Pro Gly Arg Trp
           130                    135                     140
Glu His Arg Thr Cys Arg Gln Leu Leu His Leu Lys Asp Gln Cys Leu
```

```
145                      150                     155                      160
Ile Ser Cys Cys Val Leu Ser Pro Arg Ala Gly Glu Ala Arg Gly Gln
                  165                     170                     175
His Gly Arg Ala Ala Ala Ser Val Pro Pro Thr Ala Arg Pro Gln Ala
                  180                     185                     190
His Cys Ser Phe Leu Cys Asp Trp Leu His Ser Pro Val Arg Thr Lys
                  195                     200                     205
Trp Glu Glu Val Ser Leu Phe Ser Arg Val Val Ser Ser Val Cys Asp
         210                     215                     220
Leu Pro Leu Leu Ser Ser Ser Arg Gly Thr Trp Pro Phe Ser Pro Leu
225                      230                     235                     240
Thr Ser Pro Phe His
                  245
```

```
        <210> 937
        <211> 211
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 937
Ala Glu Cys Leu Glu Ala Ser Ile Ala Arg Tyr Ala His Arg Val Ala
1                   5                   10                      15
Asn Ser Arg Tyr Thr Phe Asp Gly Glu Thr Val Thr Leu Ser Pro Ser
                  20                      25                      30
Gln Gly Val Asn Gln Leu His Gly Gly Pro Glu Gly Phe Asp Lys Arg
         35                      40                      45
Arg Trp Gln Ile Val Asn Gln Asn Asp Arg Gln Val Leu Phe Ala Leu
    50                      55                      60
Ser Ser Asp Asp Gly Asp Gln Gly Phe Pro Gly Asn Leu Gly Ala Thr
65                      70                      75                      80
Val Gln Tyr Arg Leu Thr Asp Asp Asn Arg Ile Ser Ile Thr Tyr Arg
                  85                      90                      95
Ala Thr Val Asp Lys Pro Cys Pro Val Asn Met Thr Asn His Val Tyr
                  100                     105                     110
Phe Asn Leu Asp Gly Glu Gln Ser Asp Val Arg Asn His Lys Leu Gln
         115                     120                     125
Ile Leu Ala Asp Glu Tyr Leu Pro Val Asp Glu Gly Gly Ile Pro His
         130                     135                     140
Asp Gly Leu Lys Ser Val Ala Gly Thr Ser Phe Asp Phe Arg Ser Ala
145                     150                     155                     160
Lys Ile Ile Ala Ser Glu Phe Leu Ala Asp Asp Gln Arg Lys Val
                  165                     170                     175
Lys Gly Tyr Asp His Ala Phe Leu Leu Gln Ala Lys Gly Asp Gly Lys
         180                     185                     190
Lys Val Ala Ala His Val Trp Ser Ala Asp Glu Lys Leu Gln Leu Lys
         195                     200                     205
Val Tyr Thr
210 211
```

```
        <210> 938
        <211> 118
        <212>Amino acid
        <213> Homo sapiens
```

<400> 938
Pro Leu Ser Arg Phe Leu Ser Lys Glu Ser Gln Glu Asp Trp Gly Met
1   5   10   15
Glu Arg Gln Ser Arg Val Met Ser Glu Lys Asp Glu Tyr Gln Phe Gln
            20   25   30
His Gln Gly Ala Val Glu Leu Leu Val Phe Asn Phe Leu Leu Ile Leu
        35   40   45
Thr Ile Leu Thr Ile Trp Leu Phe Lys Asn His Arg Phe Arg Phe Leu
    50   55   60
His Glu Thr Gly Gly Ala Met Val Tyr Asp Lys Pro Pro Lys Phe Ala
65   70   75   80
Met Ser Arg Glu Gln Met Ser Gln Ser Cys Ser His Thr Ala His Asn
            85   90   95
Ala Ser Leu Leu Thr Asp Ala Gly Pro Leu Ser Cys Gly Glu Ser Arg
        100   105   110
Ala Ser Cys Leu Phe Leu
        115   118

<210> 939
<211> 143
<212>Amino acid
<213> Homo sapiens

<400> 939
Asp Ser Lys Glu Pro Arg Leu Gln Gln Leu Gly Leu Leu Glu Glu Glu
1   5   10   15
Gln Leu Arg Gly Leu Gly Phe Arg Gln Thr Arg Gly Tyr Lys Ser Leu
            20   25   30
Ala Gly Cys Leu Gly His Gly Pro Leu Val Leu Gln Leu Leu Ser Phe
        35   40   45
Thr Leu Leu Ala Gly Leu Leu Val Gln Val Ser Lys Val Pro Ser Ser
    50   55   60
Ile Ser Gln Glu Gln Ser Arg Gln Asp Ala Ile Tyr Gln Asn Leu Thr
65   70   75   80
Gln Leu Lys Ala Ala Val Gly Glu Leu Ser Glu Lys Ser Lys Leu Gln
            85   90   95
Glu Ile Tyr Gln Glu Leu Thr Gln Leu Lys Ala Ala Val Gly Glu Leu
        100   105   110
Pro Glu Lys Ser Lys Leu Gln Glu Ile Tyr Gln Glu Leu Thr Trp Leu
        115   120   125
Lys Ala Ala Val Gly Glu Leu Pro Glu Lys Ser Lys Met Gln Glu
    130   135   140   143

<210> 940
<211> 63
<212>Amino acid
<213> Homo sapiens

<400> 940
Met Gln Ser Ile Ala Trp Gly His Arg Arg Asp Arg Gly Glu Ser Pro
1   5   10   15
Leu Gly Trp Gly Gln Glu Ser Glu Ala Ser Pro Ser Ala Leu Thr Glu
            20   25   30
Ala Pro Lys Ala Ala His Thr Thr Arg Leu Gly Phe Leu Ala Ala Asn

```
            35                      40                      45
Asn Pro Asn Gly His Ser Gln Pro Gln Asp Ser Phe Leu Leu    *
            50                      55                      60      62


        <210> 941
        <211> 238
        <212>Amino acid
        <213> Homo sapiens




        <400> 941
Phe Glu Thr Leu Ser Met Arg Gly Ile Pro His Met Leu Ala Leu Gly
1                   5                   10                  15
Pro Gln Gln Leu Leu Ala Gln Asp Glu Glu Gly Asp Thr Leu Leu His
            20                      25                      30
Leu Phe Ala Ala Arg Gly Leu Arg Trp Ala Ala Tyr Ala Ala Ala Glu
            35                      40                      45
Val Leu Gln Val Tyr Arg Arg Leu Asp Ile Arg Glu His Lys Gly Lys
            50                      55                      60
Thr Pro Leu Leu Val Ala Ala Ala Ala Asn Gln Pro Leu Ile Val Glu
65                      70                      75                  80
Asp Leu Leu Asn Leu Gly Ala Glu Pro Asn Ala Ala Asp His Gln Gly
                85                      90                      95
Arg Ser Val Leu His Val Ala Ala Thr Tyr Gly Leu Pro Gly Val Leu
            100                     105                     110
Leu Ala Val Leu Asn Ser Gly Val Gln Val Asp Leu Glu Ala Arg Asp
            115                     120                     125
Phe Glu Gly Leu Thr Pro Leu His Thr Ala Ile Leu Ala Leu Asn Val
            130                     135                     140
Ala Met Arg Pro Ser Asp Leu Cys Pro Arg Val Leu Ser Thr Gln Ala
145                     150                     155                 160
Arg Asp Arg Leu Asp Cys Val His Met Leu Leu Gln Met Gly Ala Asn
                165                     170                     175
His Thr Ile Gln Val Ser Gly Asp Val Gly Gly Gln Thr Leu Gly Asp
                180                     185                     190
Cys Val Glu Trp Gly His Leu Asp Val Arg Glu Leu Gln Ala Asn Ala
            195                     200                     205
Asp Phe Ala Ser Ser Leu Leu Arg Ala Leu Glu His Val Thr Ser Leu
210                     215                     220
Leu Cys Ala Leu Arg Val Phe Cys Leu Phe Leu Cys Gln Leu
225                     230                     235     238


        <210> 942
        <211> 158
        <212>Amino acid
        <213> Homo sapiens




        <400> 942
Asp Ala Trp Ala Asp Ala Trp Val Gly Thr Lys Met Ala Asp Leu Asp
1                   5                   10                  15
Ser Pro Pro Lys Leu Ser Gly Val Gln Gln Pro Ser Glu Gly Val Gly
            20                      25                      30
Gly Gly Arg Cys Ser Glu Ile Ser Ala Glu Leu Ile Arg Ser Leu Thr
            35                      40                      45
Glu Leu Gln Glu Leu Glu Ala Val Tyr Glu Arg Leu Cys Gly Glu Glu
```

```
        50                    55                    60
Lys Val Val Glu Arg Glu Leu Asp Ala Leu Leu Glu Gln Gln Asn Thr
  65                    70                    75                    80
Ile Glu Ser Lys Met Val Thr Leu His Arg Met Gly Pro Asn Leu Gln
                    85                    90                    95
Leu Ile Glu Gly Asp Ala Lys Gln Leu Ala Gly Met Ile Thr Phe Thr
                100                   105                   110
Cys Asn Leu Ala Glu Asn Val Ser Ser Lys Val Arg Gln Leu Asp Leu
            115                   120                   125
Ala Lys Asn Arg Leu Tyr Gln Ala Ile Gln Arg Ala Asp Asp Ile Leu
        130                   135                   140
Asp Leu Lys Phe Cys Met Asp Gly Val Gln Thr Ala Leu Arg
145                   150                   155       158
```

```
        <210> 943
        <211> 235
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 943
Ala Val Glu Phe Arg Val Pro Arg Ser Gly Ser Ala Tyr Leu Tyr Ser
  1                 5                    10                    15
Tyr Val Thr Val Gly Glu Leu Trp Ala Phe Thr Thr Gly Trp Asn Leu
                20                    25                    30
Ile Leu Ser Tyr Val Ile Gly Thr Ala Ser Val Ala Arg Ala Trp Ser
            35                    40                    45
Ser Ala Phe Asp Asn Leu Ile Gly Asn His Ile Ser Lys Thr Leu Gln
        50                    55                    60
Gly Ser Ile Ala Leu His Val Pro His Val Leu Ala Glu Tyr Pro Asp
65                    70                    75                    80
Phe Phe Ala Leu Gly Leu Val Leu Leu Thr Gly Leu Leu Ala Leu
                85                    90                    95
Gly Ala Ser Glu Ser Ala Leu Val Thr Lys Val Phe Thr Gly Val Asn
                100                   105                   110
Leu Leu Val Leu Gly Phe Val Met Ile Ser Gly Phe Val Lys Gly Asp
            115                   120                   125
Val His Asn Trp Lys Leu Thr Glu Glu Asp Tyr Glu Leu Ala Met Ala
        130                   135                   140
Glu Leu Asn Asp Thr Tyr Ser Leu Gly Pro Leu Gly Ser Gly Gly Phe
145                   150                   155                   160
Val Pro Phe Gly Phe Glu Gly Ile Leu Arg Gly Ala Ala Thr Cys Phe
                165                   170                   175
Tyr Ala Phe Val Gly Phe Asp Cys Ile Ala Thr Thr Gly Glu Glu Ala
                180                   185                   190
Gln Asn Pro Gln Arg Ser Ile Pro Met Gly Ile Gly Ile Ser Leu Ser
            195                   200                   205
Val Cys Phe Leu Ala Asp Phe Ala Val Ser Ser Ala Leu Thr Leu Met
        210                   215                   220
Met Pro Tyr Tyr Gln Leu Gln Pro Glu Ser Pro
225                   230                   235
```

```
        <210> 944
        <211> 284
        <212>Amino acid
        <213> Homo sapiens
```

```
      <400> 944
Gly Phe His Pro Asn Thr Thr His Tyr Arg Ala Arg Ala Ala Ala Arg
 1               5              10              15
Ala Gly Ala Gly Ser Phe Val Gly Glu Val Ser Ala Val Asp Lys Asp
            20              25              30
Phe Gly Pro Asn Gly Glu Val Arg Tyr Ser Phe Glu Met Val Gln Pro
        35              40              45
Asp Phe Glu Leu His Ala Ile Ser Gly Glu Ile Thr Asn Thr His Gln
    50              55              60
Phe Asp Arg Glu Ser Leu Met Arg Arg Arg Gly Thr Ala Val Phe Ser
 65              70              75              80
Phe Thr Val Ile Ala Thr Asp Gln Gly Ile Pro Gln Pro Leu Lys Asp
            85              90              95
Gln Ala Thr Val His Val Tyr Met Lys Asp Ile Asn Asp Asn Ala Pro
           100             105             110
Lys Phe Leu Lys Asp Phe Tyr Gln Ala Thr Ile Ser Glu Ser Ala Ala
           115             120             125
Asn Leu Thr Gln Val Leu Arg Val Ser Ala Ser Asp Val Asp Glu Gly
       130             135             140
Asn Asn Gly Leu Ile His Tyr Ser Ile Ile Lys Gly Asn Glu Glu Arg
145             150             155             160
Gln Phe Ala Ile Asp Ser Thr Ser Gly Gln Val Thr Leu Ile Gly Lys
           165             170             175
Leu Asp Tyr Glu Ala Thr Pro Ala Tyr Ser Leu Val Ile Gln Ala Val
       180             185             190
Asp Ser Gly Thr Ile Pro Leu Asn Ser Thr Cys Thr Leu Asn Ile Asp
       195             200             205
Ile Leu Asp Glu Asn Asp Asn Thr Pro Phe Phe Leu Leu Asn Gln His
    210             215             220
Phe Phe Val Asp Val Leu Glu Asn Met Arg Ile Gly Glu Leu Gly Ala
225             230             235             240
Ser Gly Thr Ala Thr Asp Ser Asp Ser Gly Asp Ile Ala Asp Leu Tyr
            245             250             255
Tyr Lys Phe Thr Gly Thr Lys His Pro Pro Gly Thr Phe Ser Ile Ser
           260             265             270
Pro Lys His Leu Gly Val Phe Phe Leu Ala Gln Lys
        275             280             284


      <210> 945
      <211> 119
      <212>Amino acid
      <213> Homo sapiens




      <400> 945
Gly Asp Cys Tyr Asp Leu Tyr Gly Gly Glu Lys Phe Ala Thr Leu Ala
 1               5              10              15
Glu Leu Val Gln Tyr Tyr Met Glu His His Gly Gln Leu Lys Glu Lys
            20              25              30
Asn Gly Asp Val Ile Glu Leu Lys Asn Pro Leu Asn Cys Ala Asp Pro
        35              40              45
Thr Ser Gln Arg Trp Phe His Gly His Leu Ser Gly Lys Glu Ala Glu
    50              55              60
Lys Leu Leu Thr Glu Lys Gly Lys His Ser Ser Phe Leu Val Arg Glu
 65              70              75              80
Ser Gln Ser His Pro Gly Asp Phe Val Leu Ser Val Cys Thr Gly Asp
            85              90              95
Asp Lys Gly Glu Ser Asn Asp Gly Lys Ser Lys Val Thr His Val Met
```

```
                    100                    105                    110
    Ile His Cys Gln Glu Leu Lys
            115                 119


        <210> 946
        <211> 166
        <212>Amino acid
        <213> Homo sapiens




        <400> 946
    Ile Asp Ser Gly Asn Gln Asn Gly Gly Asn Asp Asp Lys Thr Lys Asn
    1               5                   10                  15
    Ala Glu Arg Asn Tyr Leu Asn Val Leu Pro Gly Glu Phe Tyr Ile Thr
                20                  25                  30
    Arg His Ser Asn Leu Ser Glu Ile His Val Ala Phe His Leu Cys Val
            35                  40                  45
    Asp Asp His Val Lys Ser Gly Asn Ile Thr Ala Arg Asp Pro Ala Ile
        50                  55                  60
    Met Gly Leu Arg Asn Ile Leu Lys Val Cys Cys Thr His Asp Ile Thr
    65                  70                  75                  80
    Thr Ile Ser Ile Pro Leu Leu Leu Val His Asp Met Ser Glu Glu Met
                85                  90                  95
    Thr Ile Pro Trp Cys Leu Arg Arg Ala Glu Leu Val Phe Lys Cys Val
                100                 105                 110
    Lys Gly Phe Met Met Glu Met Ala Ser Trp Asp Gly Gly Ile Ser Arg
            115                 120                 125
    Thr Val Gln Phe Leu Val Pro Gln Ser Ile Ser Glu Glu Met Phe Tyr
        130                 135                 140
    Gln Leu Ser Asn Met Leu Pro Gln Ile Phe Arg Val Ser Ser Thr Leu
    145                 150                 155                 160
    Thr Leu Thr Ser Lys His
                165 166


        <210> 947
        <211> 121
        <212>Amino acid
        <213> Homo sapiens




        <400> 947
    Ser Ile Leu Pro Ala Leu Leu Val Thr Ile Leu Ile Phe Met Asp Gln
    1               5                   10                  15
    Gln Ile Thr Ala Val Ile Val Asn Arg Lys Glu Asn Lys Leu Lys Lys
                20                  25                  30
    Ala Ala Gly Tyr His Leu Asp Leu Phe Trp Val Gly Ile Leu Met Ala
            35                  40                  45
    Leu Cys Ser Phe Met Gly Leu Pro Trp Tyr Val Ala Ala Thr Val Ile
        50                  55                  60
    Ser Ile Ala His Ile Asp Ser Leu Lys Met Glu Thr Glu Thr Ser Ala
    65                  70                  75                  80
    Pro Gly Glu Gln Pro Gln Phe Leu Gly Val Arg Glu Gln Arg Val Thr
                85                  90                  95
    Gly Ile Ile Val Phe Ile Leu Thr Gly Ile Ser Val Phe Leu Ala Pro
                100                 105                 110
    Ile Leu Lys Cys Ile Pro Leu Pro Val
```

115   .   120 121

        <210> 948
        <211> 191
        <212>Amino acid
        <213> Homo sapiens

        <400> 948
Gly Ala Ser Arg Val Glu Ala Gly Ser Ala Asn Gly Met Leu Ile Asp
 1   5   10   15
Gly Gly Ser Gln Ile Val Lys Val Gln Gly His Ala Asp Gly Thr Thr
            20   25   30
Ile Asn Lys Ser Gly Ser Gln Asp Val Val Gln Gly Ser Leu Ala Thr
        35   40   45
Asn Thr Thr Ile Asn Gly Gly Arg Gln Tyr Val Glu Gln Ser Thr Val
    50   55   60
Glu Thr Thr Thr Ile Lys Asn Gly Gly Glu Gln Arg Val Tyr Glu Ser
65   70   75   80
Arg Ala Leu Asp Thr Thr Ile Glu Gly Gly Thr Gln Ser Leu Asn Ser
            85   90   95
Lys Ser Thr Ala Lys Asn Thr His Ile Tyr Ser Gly Gly Thr Gln Ile
        100   105   110
Val Asp Asn Thr Ser Thr Ser Asp Val Ile Glu Val Tyr Ser Gly Gly
        115   120   125
Val Leu Asp Val Arg Gly Gly Thr Ala Thr Asn Val Thr Gln His Asp
    130   135   140
Gly Ala Ile Leu Lys Thr Asn Thr Asn Gly Thr Thr Val Ser Gly Thr
145   150   155   160
Asn Ser Glu Gly Ala Phe Ser Ile His Asn His Val Ala Asp Asn Val
            165   170   175
Leu Leu Glu Asn Gly Gly His Leu Asp Ile Asn Ala Tyr Gly Ser
            180   185   190 191

        <210> 949
        <211> 98
        <212>Amino acid
        <213> Homo sapiens

        <400> 949
Phe Phe Ser Ser Ile Gln Leu Thr Asp Asp Gln Gly Pro Val Leu Met
 1   5   10   15
Thr Thr Val Ala Met Pro Val Phe Ser Lys Gln Asn Glu Thr Arg Ser
            20   25   30
Lys Gly Ile Leu Leu Gly Val Val Gly Thr Asp Val Pro Val Lys Glu
        35   40   45
Leu Leu Lys Thr Ile Pro Lys Tyr Lys Val Met Asn Asp Leu Ile Pro
    50   55   60
Glu Ile Lys Ala Thr Glu Met Pro Arg Ala Leu Phe Ser Gln Ser Ser
65   70   75   80
Gly Phe Lys Leu Tyr Phe Gly Ala Met Phe Leu Leu Thr Thr Ile Thr
            85   90   95
Ala Cys
    98

```
<210> 950
<211> 196
<212>Amino acid
<213> Homo sapiens
```

```
<400> 950
Ser Cys Ser Gly Thr Gly Thr Asn Ala Cys Tyr Met Glu Asp Met Ser
1               5                   10                  15
Asn Ile Asp Leu Val Glu Gly Asp Glu Gly Arg Met Cys Ile Asn Thr
            20                  25                  30
Glu Trp Gly Ala Phe Gly Asp Asp Gly Ala Leu Glu Asp Ile Arg Thr
        35                  40                  45
Glu Phe Asp Arg Glu Leu Asp Leu Gly Ser Leu Asn Pro Gly Lys Gln
    50                  55                  60
Leu Phe Glu Lys Met Ile Ser Gly Leu Tyr Leu Gly Glu Leu Val Arg
65                  70                  75                  80
Leu Ile Leu Leu Lys Met Ala Lys Ala Gly Leu Leu Phe Gly Gly Glu
                85                  90                  95
Lys Ser Ser Ala Leu His Thr Lys Gly Lys Ile Glu Thr Arg His Val
            100                 105                 110
Ala Ala Met Glu Lys Tyr Lys Glu Gly Leu Ala Asn Thr Arg Glu Ile
        115                 120                 125
Leu Val Asp Leu Gly Leu Glu Pro Ser Glu Ala Asp Cys Ile Ala Val
    130                 135                 140
Gln His Val Cys Thr Ile Val Ser Phe Arg Ser Ala Asn Leu Cys Ala
145                 150                 155                 160
Ala Ala Leu Ala Ala Ile Leu Thr Arg Leu Arg Glu Asn Lys Lys Val
                165                 170                 175
Glu Arg Leu Arg Thr Thr Val Gly Met Asp Gly Thr Leu Tyr Lys Ile
            180                 185                 190
His Pro Gln Tyr
        195 196
```

```
<210> 951
<211> 721
<212>Amino acid
<213> Homo sapiens
```

```
<400> 951
Phe Val Ala Ile Ala Thr Asn Gly Val Val Pro Ala Gly Gly Ser Tyr
1               5                   10                  15
Tyr Met Ile Ser Arg Ser Leu Gly Pro Glu Phe Gly Gly Ala Val Gly
            20                  25                  30
Leu Cys Phe Tyr Leu Gly Thr Thr Phe Ala Gly Ala Met Tyr Ile Leu
        35                  40                  45
Gly Thr Ile Glu Ile Leu Leu Ala Tyr Leu Phe Pro Ala Met Ala Ile
    50                  55                  60
Phe Lys Ala Glu Asp Ala Ser Gly Glu Ala Ala Ala Met Leu Asn Asn
65                  70                  75                  80
Met Arg Val Tyr Gly Thr Cys Val Leu Thr Cys Met Ala Thr Val Val
                85                  90                  95
Phe Val Gly Val Lys Tyr Val Asn Lys Phe Ala Leu Val Phe Leu Gly
            100                 105                 110
Cys Val Ile Leu Ser Ile Leu Ala Ile Tyr Ala Gly Val Ile Lys Ser
```

```
                115                     120                     125
Ala Phe Asp Pro Pro Asn Phe Pro Ile Cys Leu Leu Gly Asn Arg Thr
    130                     135                     140
Leu Ser Arg His Gly Phe Asp Val Cys Ala Lys Leu Ala Trp Glu Gly
145                     150                     155                     160
Asn Glu Thr Val Thr Thr Arg Leu Trp Gly Leu Phe Cys Ser Ser Arg
                165                     170                     175
Phe Leu Asn Ala Thr Cys Asp Glu Tyr Phe Thr Arg Asn Asn Val Thr
            180                     185                     190
Glu Ile Gln Gly Ile Pro Gly Ala Ala Ser Gly Leu Ile Lys Glu Asn
            195                     200                     205
Leu Trp Ser Ser Tyr Leu Thr Lys Gly Val Ile Val Glu Arg Ser Gly
210                     215                     220
Met Thr Ser Val Gly Leu Ala Asp Gly Thr Pro Ile Asp Met Asp His
225                     230                     235                     240
Pro Tyr Val Phe Ser Asp Met Thr Ser Tyr Phe Thr Leu Leu Val Gly
                245                     250                     255
Ile Tyr Phe Pro Ser Val Thr Gly Ile Met Ala Gly Ser Asn Arg Ser
                260                     265                     270
Gly Asp Leu Arg Asp Ala Gln Lys Ser Ile Pro Thr Gly Thr Ile Leu
        275                     280                     285
Ala Ile Ala Thr Thr Ser Ala Val Tyr Ile Ser Ser Val Val Leu Phe
    290                     295                     300
Gly Ala Cys Ile Glu Gly Val Val Leu Arg Asp Lys Phe Gly Glu Ala
305                     310                     315                     320
Val Asn Gly Asn Leu Val Val Gly Thr Leu Ala Trp Pro Ser Pro Trp
                325                     330                     335
Val Ile Val Ile Gly Ser Phe Phe Ser Thr Cys Gly Ala Gly Leu Gln
            340                     345                     350
Ser Leu Thr Gly Ala Pro Arg Leu Leu Gln Ala Ile Ser Arg Asp Gly
    355                     360                     365
Ile Val Pro Phe Leu Gln Val Phe Gly His Gly Lys Ala Asn Gly Glu
    370                     375                     380
Pro Thr Trp Ala Leu Leu Leu Thr Ala Cys Ile Cys Glu Ile Gly Ile
385                     390                     395                     400
Leu Ile Ala Ser Leu Asp Glu Val Ala Pro Ile Leu Ser Met Phe Phe
                405                     410                     415
Leu Met Cys Tyr Met Phe Val Asn Leu Ala Cys Ala Val Gln Thr Leu
            420                     425                     430
Leu Arg Thr Pro Asn Trp Arg Pro Arg Phe Arg Tyr Tyr His Trp Thr
        435                     440                     445
Leu Ser Phe Leu Gly Met Ser Leu Cys Leu Ala Leu Met Phe Ile Cys
    450                     455                     460
Ser Trp Tyr Tyr Ala Leu Val Ala Met Leu Ile Ala Gly Leu Ile Tyr
465                     470                     475                     480
Lys Tyr Ile Glu Tyr Arg Gly Ala Lys Lys Glu Trp Gly Asp Gly Ile
            485                     490                     495
Arg Gly Leu Ser Leu Ser Ala Ala Arg Tyr Ala Leu Leu Arg Leu Glu
        500                     505                     510
Glu Gly Pro Pro His Thr Lys Asn Trp Arg Pro Gln Leu Leu Val Leu
    515                     520                     525
Val Arg Val Asp Gln Asp Gln Asn Val Val His Pro Gln Leu Leu Ser
    530                     535                     540
Leu Thr Ser Gln Leu Lys Ala Gly Lys Gly Leu Thr Ile Val Gly Ser
545                     550                     555                     560
Val Leu Glu Gly Thr Phe Leu Glu Asn His Pro Gln Ala Gln Arg Ala
                565                     570                     575
Glu Glu Ser Ile Arg Arg Leu Met Glu Ala Glu Lys Val Lys Gly Phe
        580                     585                     590
Cys Gln Val Val Ile Ser Ser Asn Leu Arg Asp Gly Val Ser His Leu
    595                     600                     605
Ile Gln Ser Gly Gly Leu Gly Gly Leu Gln His Asn Thr Val Leu Val
610                     615                     620
Gly Trp Pro Arg Asn Trp Arg Gln Lys Glu Asp His Gln Thr Trp Arg
```

```
625                  .630                    635                     640
Asn Phe Ile Glu Leu Val Arg Glu Thr Thr Ala Gly His Leu Ala Leu
                645                 650                     655
Leu Val Thr Lys Asn Val Ser Met Phe Pro Gly Asn Pro Glu Arg Phe
                660                 665                     670
Ser Glu Gly Ser Ile Asp Arg Trp Gly Ile Gly His Asp Gly Gly Met
            675                 680                 685
Leu Met Leu Val Pro Phe Leu Leu Arg His His Lys Val Trp Arg Lys
        690                 695                 700
Cys Lys Met Arg Ile Phe Thr Val Ala Gln Met Val Asp Met His Ala
705             .710                 715                     720
Met
721
```

```
        <210> 952
        <211> 42
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 952
Phe Tyr Leu Arg Leu Leu Ser Phe Phe Cys Phe Gln Glu His Glu Lys
1               5                   10                  15
Arg Cys Trp Ser Val Asp Phe Asn Leu Met Asp Pro Lys Leu Leu Ala
            20                  25                  30
Ser Gly Ser Asp Asp Ala Lys Gly Thr Val
        35                  40      42
```

```
        <210> 953
        <211> 80
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 953
Arg Asn Ser Lys Ala Met His Arg Ser Ser Cys Asp Gly Pro Leu Leu
1               5                   10                  15
Ser Leu Pro Ser Val Gly Arg Ser Ala Thr His Ala Leu Val Gln Ala
            20                  25                  30
Gln Leu Ile Cys Ser Gly Ala Arg Arg Gly Met His Ala Phe Ile Val
        35                  40                  45
Pro Ile Arg Ser Leu Gln Asp His Thr Pro Leu Pro Gly Lys Pro Ile
    50                  55                  60
Met Leu Pro Gln Gly Thr Leu Pro Gly Gly Glu Pro Arg Trp Pro Pro
65                  70                  75                  80
```

```
        <210> 954
        <211> 202
        <212>Amino acid
        <213> Homo sapiens
```

<400> 954

```
Cys Gly Thr Leu Ile Leu Gln Ala Arg Ala Tyr Val Gly Pro His Val
1               5                   10                  15
Leu Ala Val Val Thr Arg Thr Gly Phe Cys Thr Ala Lys Gly Gly Leu
            20                  25                  30
Val Ser Ser Ile Leu His Pro Arg Pro Ile Asn Phe Lys Phe Tyr Lys
        35                  40                  45
His Ser Met Lys Phe Val Ala Ala Leu Ser Val Leu Ala Leu Leu Gly
        50                  55                  60
Thr Ile Tyr Ser Ile Phe Ile Leu Tyr Arg Asn Arg Val Pro Leu Asn
65                  70                  75                  80
Glu Ile Val Ile Arg Ala Leu Asp Leu Val Thr Val Val Val Pro Pro
                85                  90                  95
Ala Leu Pro Ala Ala Met Thr Val Cys Thr Leu Tyr Ala Gln Ser Arg
            100                 105                 110
Leu Arg Arg Gln Gly Ile Phe Cys Ile His Pro Leu Arg Ile Asn Leu
        115                 120                 125
Gly Gly Lys Leu Gln Leu Val Cys Phe Asp Lys Thr Gly Thr Leu Thr
    130                     135                 140
Glu Asp Gly Leu Asp Val Met Gly Val Val Pro Leu Lys Gly Gln Ala
145                 150                 155                 160
Phe Leu Pro Leu Val Pro Glu Pro Arg Arg Leu Pro Val Gly Pro Leu
            165                 170                 175
Leu Arg Ala Leu Ala Thr Cys His Ala Leu Ser Arg Leu Gln Asp Thr
            180                 185                 190
Pro Val Gly Asp Pro Met Asp Leu Lys Met
            195                 200     202
```


<210> 955
<211> 188
<212> Amino acid
<213> Homo sapiens

<400> 955

```
Gln Ile Glu Tyr Phe Arg Ser Leu Leu Asp Glu His His Ile Ser Tyr
1               5                   10                  15
Val Ile Asp Glu Asp Val Lys Ser Gly Arg Tyr Met Glu Leu Glu Gln
            20                  25                  30
Arg Tyr Met Asp Leu Ala Glu Asn Ala Arg Phe Glu Arg Glu Gln Leu
        35                  40                  45
Leu Gly Val Gln Gln His Leu Ser Asn Thr Leu Lys Met Ala Glu Gln
        50                  55                  60
Asp Asn Lys Glu Ala Gln Glu Met Ile Gly Ala Leu Lys Glu Arg Ser
65                  70                  75                  80
His His Met Glu Arg Ile Ile Glu Ser Glu Gln Lys Gly Lys Ala Ala
                85                  90                  95
Leu Ala Ala Thr Leu Glu Glu Tyr Lys Ala Thr Val Ala Ser Asp Gln
            100                 105                 110
Ile Glu Met Asn Arg Leu Lys Ala Gln Leu Glu Asn Glu Lys Gln Lys
        115                 120                 125
Val Ala Glu Leu Tyr Ser Ile His Asn Ser Gly Asp Lys Ser Asp Ile
    130                     135                 140
Gln Asp Leu Leu Glu Ser Val Arg Leu Asp Lys Glu Lys Ala Glu Thr
145                 150                 155                 160
Leu Ala Ser Ser Leu Gln Glu Asp Leu Ala His Thr Arg Asn Asp Ala
            165                 170                 175
Asn Arg Leu Gln Asp Ala Ile Ala Lys Gly Arg Gly
```

180   185   188

```
<210> 956
<211> 132
<212> Amino acid
<213> Homo sapiens
```

```
<400> 956
Ala Arg Tyr Arg Phe Thr Leu Ser Ala Arg Thr Gln Val Gly Ser Gly
1           5                   10                  15
Glu Ala Val Thr Glu Glu Ser Pro Ala Pro Pro Asn Glu Ala Thr Pro
            20              25                  30
Thr Ala Ala Pro Pro Thr Leu Pro Pro Thr Thr Val Gly Ala Thr Gly
        35              40                  45
Ala Val Ser Ser Thr Asp Ala Thr Ala Ile Ala Ala Thr Thr Glu Ala
    50              55                  60
Thr Thr Val Pro Ile Ile Pro Thr Val Ala Pro Thr Thr Met Ala Thr
65              70                  75                  80
Thr Thr Thr Val Ala Thr Thr Thr Thr Thr Thr Ala Ala Ala Thr Thr
            85                  90                  95
Thr Thr Glu Ser Pro Pro Thr Thr Thr Ser Gly Thr Lys Ile His Glu
        100                 105                 110
Ser Ala Pro Asp Glu Gln Ser Ile Trp Asn Val Thr Val Leu Pro Asn
    115                 120                 125
Ser Lys Trp Ala
130         132
```

```
<210> 957
<211> 220
<212> Amino acid
<213> Homo sapiens
```

```
<400> 957
Leu Lys Ser Thr Gln Asp Glu Ile Asn Gln Ala Arg Ser Lys Leu Ser
1               5                   10                  15
Gln Leu His Glu Ser Arg Gln Glu Ala His Arg Ser Leu Glu Gln Tyr
            20                  25                  30
Asp Gln Val Leu Asp Gly Ala His Gly Ala Ser Leu Thr Asp Leu Ala
        35                  40                  45
Asn Leu Ser Glu Gly Val Ser Leu Ala Glu Arg Gly Ser Phe Gly Ala
    50                  55                  60
Met Asp Asp Pro Phe Lys Asn Lys Ala Leu Leu Phe Ser Asn Asn Thr
65                  70                  75                  80
Gln Glu Leu His Pro Asp Pro Phe Gln Thr Glu Asp Pro Phe Lys Ser
            85                  90                  95
Asp Pro Phe Lys Gly Ala Asp Pro Phe Lys Gly Asp Pro Phe Gln Asn
        100                 105                 110
Asp Pro Phe Ala Glu Gln Gln Thr Thr Ser Thr Asp Pro Phe Gly Gly
        115                 120                 125
Asp Pro Phe Lys Glu Ser Asp Pro Phe Arg Gly Ser Ala Thr Asp Asp
    130                 135                 140
Phe Phe Lys Lys Gln Thr Lys Asn Asp Pro Phe Thr Ser Asp Pro Phe
145                 150                 155                 160
Thr Lys Asn Pro Ser Leu Pro Ser Lys Leu Asp Pro Phe Glu Ser Ser
```

528

```
                   165                    170                    175
Asp Pro Phe Ser Ser Ser Ser Val Ser Ser Lys Gly Ser Asp Pro Phe
                180                    185                    190
Gly Thr Leu Asp Pro Phe Gly Ser Gly Ser Phe Asn Ser Ala Glu Gly
        195                    200                    205
Phe Ala Asp Phe Ser Thr Ile Glu Gly Arg Arg Gly
    210                    215                    220
```

```
        <210> 958
        <211> 250
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 958
Arg Thr Arg Gly Gly Ser Gly Asn Ser Ser Gln Pro Ser Leu Arg Glu
  1                 5                    10                    15
Gly His Asp Lys Pro Val Phe Asn Gly Ala Gly Lys Pro His Ser Ser
                20                    25                    30
Thr Ser Ser Pro Ser Val Pro Lys Thr Ser Ala Ser Arg Thr Gln Lys
        35                    40                    45
Ser Ala Val Glu His Lys Ala Lys Lys Ser Leu Ser His Pro Ser His
        50                    55                    60
Ser Arg Pro Gly Pro Met Val Thr Pro His Asn Lys Ala Lys Ser Pro
65                    70                    75                    80
Gly Val Arg Gln Pro Gly Ser Ser Ser Ser Ala Pro Gly Gln Pro
                85                    90                    95
Ser Thr Gly Val Ala Arg Pro Thr Val Ser Ser Gly Pro Val Pro Arg
            100                    105                    110
Arg Gln Asn Gly Ser Ser Ser Ser Gly Pro Glu Arg Ser Ile Ser Gly
        115                    120                    125
Ser Lys Lys Pro Thr Asn Asp Ser Asn Pro Ser Arg Arg Thr Val Ser
    130                    135                    140
Gly Thr Cys Gly Pro Gly Gln Pro Ala Ser Ser Ser Gly Gly Pro Gly
145                    150                    155                    160
Arg Pro Ile Ser Gly Ser Val Ser Ser Ala Arg Pro Leu Gly Ser Ser
                165                    170                    175
Arg Gly Pro Gly Arg Pro Val Ser Ser Pro His Glu Leu Arg Arg Pro
                180                    185                    190
Val Ser Gly Leu Gly Pro Pro Gly Arg Ser Val Ser Gly Pro Gly Arg
            195                    200                    205
Ser Ile Ser Gly Ser Ile Pro Ala Gly Arg Thr Val Ser Asn Ser Val
    210                    215                    220
Pro Gly Arg Pro Val Ser Ser Leu Gly Pro Gly Gln Thr Val Ser Ser
225                    230                    235                    240
Ser Gly Pro Thr Ile Lys Pro Lys Cys Thr
                245                    250
```

```
        <210> 959
        <211> 48
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 959
Arg Gly Lys Gly Ile Thr Pro Arg Tyr His Leu Cys Ile Ser Asp Pro
```

```
    1                5                     10                 15
His Asn Leu Lys Ile Cys Cys Arg Val Asn Gly Glu Val Val Gln Ser
            20              ·             25                 30
Ser Asn Thr Asn Gln Met Val Phe Lys Thr Glu Asp Leu Ile Ala Trp
        · 35             40              45                 48
```

```
        <210> 960
        <211> 63
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 960
Val Val Ala Val Thr Arg Trp Leu Cys Glu Asn Gly Val Ser Tyr Leu
 1                5                     10                 15
Arg Lys Cys Val Cys Ser Ala Cys Arg His Gly Thr Arg Cys Ala Gly
            20                          25                 30
Glu Val Ala Ala Ala Ala Asn Asn Ser His Cys Thr Val Gly Ile Ala
        35                      40                  45
Phe Asn Ala Lys Ile Gly Gly Met Gly Asn Gln Leu Thr Trp Met
    50                      55                  60         63
```

```
        <210> 961
        <211> 59
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 961
Gly Ala Pro Pro Pro Phe Val Pro Thr Leu Lys Ser Asp Asp Asp Thr
 1                5                     10                 15
Ser Asn Phe Asp Glu Pro Lys Lys Asn Ser Trp Val Ser Ser Ser Pro
            20                          25                 30
Cys Gln Leu Ser Pro Ser Gly Phe Ser Gly Glu Glu Leu Pro Phe Val
        35                      40                  45
Gly Phe Ser Tyr Ser Lys Ala Leu Gly Ile Leu
    50                      55                  59
```

```
        <210> 962
        <211> 140
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 962
Phe Val Glu Arg Leu Ala His Leu His Ala Ala Cys Ala Pro Arg Arg
 1                5                     10                 15
Lys Val Ala Leu Leu Leu Glu Val Cys Arg Asp Val Tyr Ala Gly Leu
            20                          25                 30
Ala Arg Gly Glu Asn Gln Asp Pro Leu Gly Ala Asp Ala Phe Leu Pro
```

```
                    35                      40                      45
Ala Leu Thr Glu Glu Leu Ile Trp Ser Pro Asp Ile Gly Asp Thr Gln
         50                      55                      60
Leu Asp Val Glu Phe Leu Met Glu Leu Leu Asp Pro Asp Glu Leu Arg
 65                      70                      75                      80
Gly Glu Ala Gly Tyr Tyr Leu Thr Thr Trp Phe Gly Ala Leu His His
                     85                      90                      95
Ile Ala His Tyr Gln Pro Glu Thr Asp Arg Ala Pro Arg Gly Leu Ser
                    100                     105                     110
Ser Glu Ala Arg Ala Ser Leu His Gln Trp His Arg Arg Arg Thr Leu
                    115                     120                     125
His Arg Lys Asp His Pro Arg Ala Gln Gln Leu Asp
                    130                     135                     140
```

<210> 963
<211> 153
<212> Amino acid
<213> Homo sapiens

<400> 963

```
Phe Trp Met Asp Pro Tyr Asn Pro Leu Asn Phe Lys Ala Pro Phe Gln
  1               5                      10                      15
Thr Ser Gly Glu Asn Glu Lys Gly Cys Arg Asp Ser Lys Thr Pro Ser
                 20                      25                      30
Glu Ser Ile Val Ala Ile Ser Glu Cys His Thr Leu Leu Ser Cys Lys
                 35                      40                      45
Val Gln Leu Leu Gly Ser Gln Glu Ser Glu Cys Pro Asp Ser Val Gln
         50                      55                      60
Arg Asp Val Leu Ser Gly Gly Arg His Thr His Val Lys Arg Lys Lys
 65                      70                      75                      80
Val Thr Phe Leu Glu Glu Val Thr Glu Tyr Tyr Ile Ser Gly Asp Glu
                     85                      90                      95
Asp Arg Lys Gly Pro Trp Glu Glu Phe Ala Arg Asp Gly Cys Arg Phe
                    100                     105                     110
Gln Lys Arg Ile Gln Glu Thr Glu Asp Ala Ile Gly Tyr Cys Leu Thr
                    115                     120                     125
Phe Glu His Arg Glu Arg Met Phe Asn Arg Leu Gln Gly Thr Cys Phe
                    130                     135                     140
Lys Gly Leu Asn Val Leu Lys Gln Cys
145               150         153
```

<210> 964
<211> 54
<212> Amino acid
<213> Homo sapiens

<400> 964

```
Ala Ala Ser Thr Ala Tyr Ser Phe Phe Gly Thr Val Glu Asn Met Ala
  1               5                      10                      15
Pro Lys Val Val Asn Arg Pro Gly His Thr Gln Ser Ala Asp Trp Gly
                 20                      25                      30
Ser Phe Gly Gly Leu Met Gly Arg Phe Glu Phe Gly Ile Phe Leu Lys
         35                      40                      45
Gly Lys Glu Ile Val Lys
```

50   54


```
<210> 965
<211> 39
<212>Amino acid
<213> Homo sapiens
```


```
<400> 965
Gly Phe Val Phe Leu Pro Gly Pro Met Ser Val Gly Leu Asp Phe Ser
1               5                   10                  15
Leu Pro Gly Met Glu His Val Tyr Gly Ile Pro Glu His Ala Asp Asn
            20                  25                  30
Leu Arg Leu Lys Val Thr Glu
        35              39
```


```
<210> 966
<211> 130
<212>Amino acid
<213> Homo sapiens
```


```
<400> 966
Gly Ser Glu Cys Gln Gly Thr Asp Leu Asp Thr Arg Asn Cys Thr Ser
1               5                   10                  15
Asp Leu Cys Val His Thr Ala Ser Gly Pro Glu Asp Val Ala Leu Tyr
            20                  25                  30
Val Gly Leu Ile Ala Val Ala Val Cys Leu Val Leu Leu Leu Leu Val
        35              40                  45
Leu Ile Leu Val Tyr Cys Arg Lys Lys Glu Gly Leu Asp Ser Asp Val
    50              55                  60
Ala Asp Ser Ser Ile Leu Thr Ser Gly Phe Gln Pro Val Ser Ile Lys
65              70                  75                  80
Pro Ser Lys Ala Asp Asn Pro His Leu Leu Thr Ile Gln Pro Asp Leu
            85                  90                  95
Ser Thr Thr Thr Thr Thr Tyr Gln Gly Ser Leu Cys Pro Arg Gln Asp
            100                 105                 110
Gly Pro Ser Pro Lys Phe Gln Leu Thr Asn Gly His Leu Leu Ser Pro
        115                 120                 125
Leu Gly
    130
```


```
<210> 967
<211> 259
<212>Amino acid
<213> Homo sapiens
```


```
<400> 967
Leu Ile Tyr Asn Glu Asp Met Ile Cys Trp Ile Glu Ser Arg Glu Ser
1               5                   10                  15
Ser Asn Gln Leu Lys Cys Ile Gln Ile Thr Lys Ala Gly Gly Leu Thr
```

532

```
                    20                          25                          30
Asp Glu Trp Thr Ile Asn Ile Leu Gln Ser Phe His Asn Val Gln Gln
            35                          40                          45
Met Ala Ile Asp Trp Leu Thr Arg Asn Leu Tyr Phe Val Asp His Val
        50                          55                          60
Gly Asp Arg Ile Phe Val Cys Asn Ser Asn Gly Ser Val Cys Val Thr
65                          70                          75                          80
Leu Ile Asp Leu Glu Leu His Asn Pro Lys Ala Ile Ala Val Asp Pro
                    85                          90                          95
Ile Ala Gly Lys Leu Phe Phe Thr Asp Tyr Gly Asn Val Ala Lys Val
                100                         105                         110
Glu Arg Cys Asp Met Asp Gly Met Asn Arg Thr Arg Ile Ile Asp Ser
            115                         120                         125
Lys Thr Glu Gln Pro Ala Ala Leu Ala Leu Asp Leu Val Asn Lys Leu
        130                         135                         140
Val Tyr Trp Val Asp Leu Tyr Leu Asp Tyr Val Gly Val Val Asp Tyr
145                         150                         155                         160
Gln Gly Lys Asn Arg His Ala Val Ile Gln Gly Arg Gln Val Arg His
                165                         170                         175
Leu Tyr Gly Ile Thr Val Phe Glu Asp Tyr Leu Tyr Ala Thr Asn Ser
            180                         185                         190
Asp Ser Tyr Asn Ile Val Arg Ile Ser Arg Phe Asn Gly Thr Asp Ile
            195                         200                         205
His Ser Leu Ile Lys Ile Glu Asn Ala Trp Gly Ile Arg Ile Tyr Gln
        210                         215                         220
Lys Arg Thr Gln Pro Thr Val Arg Ser His Ala Cys Glu Val Asp Pro
225                         230                         235                         240
Tyr Gly Met Pro Gly Gly Cys Ser His Ile Cys Leu Leu Ser Ser Ser
                245                         250                         255
Tyr Thr Lys
        259
```

```
        <210> 968
        <211> 161
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 968
Ser Ser Gly Asn Pro Gln Pro Gly Asp Ser Ser Gly Gly Gly Ala Gly
1                   5                           10                          15
Gly Gly Leu Pro Ser Pro Gly Glu Gln Glu Leu Ser Arg Arg Leu Gln
                20                          25                          30
Arg Leu Tyr Pro Ala Val Asn Gln Gln Glu Thr Pro Leu Pro Arg Ser
            35                          40                          45
Trp Ser Pro Lys Asp Lys Tyr Asn Tyr Ile Gly Leu Ser Gln Gly Asn
        50                          55                          60
Leu Arg Val His Tyr Lys Gly His Gly Lys Asn His Lys Asp Ala Ala
65                  70                          75                          80
Ser Val Arg Ala Thr His Pro Ile Pro Ala Ala Cys Gly Ile Tyr Tyr
                85                          90                          95
Phe Glu Val Lys Ile Val Ser Lys Gly Arg Asp Gly Tyr Met Gly Ile
                100                         105                         110
Gly Leu Ser Ala Gln Gly Val Asn Met Asn Arg Leu Pro Gly Trp Asp
            115                         120                         125
Lys His Ser Tyr Gly Tyr His Gly Asp Asp Gly His Ser Phe Cys Ser
        130                         135                         140
Ser Gly Thr Gly Gln Pro Tyr Gly Pro Thr Phe Thr Thr Gly Asp Val
145                         150                         155                         160
Ile
```

161

```
<210> 969
<211> 76
<212>Amino acid
<213> Homo sapiens


<400> 969
Phe Phe Phe Phe Lys Met Gly Ser Arg Ser Val Thr Gln Ala Gly Val
1               5                   10                  15
Gln Trp Cys Asp Val Ser Ser Leu Gln Ala Pro Pro Pro Arg Phe Thr
            20                  25                  30
Leu Phe Cys Leu Ser Leu Pro Ser Ser Trp Asp Tyr Arg Cys Val Pro
        35                  40                  45
Pro Cys Pro Ala Asn Phe Phe Val Phe Leu Val Glu Thr Gly Phe His
    50                  55                  60
Arg Val Ser Gln Tyr Gly Leu Asp Leu Leu Thr Ser
65                  70              75  76


<210> 970
<211> 267
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(267)
<223> X = any amino acid or stop code


<400> 970
Gln Leu Ser Leu Ala Arg Gly Lys Val Phe Leu Cys Ala Leu Ser Phe
1               5                   10                  15
Val Tyr Phe Ala Lys Ala Leu Ala Glu Gly Tyr Leu Lys Ser Thr Ile
            20                  25                  30
Thr Gln Ile Glu Arg Arg Val Asp Ile Pro Ser Ser Leu Val Gly Val
        35                  40                  45
Ile Asp Gly Ser Phe Glu Ile Gly Asn Leu Leu Val Ile Thr Phe Val
    50                  55                  60
Ser Tyr Phe Gly Ala Lys Leu His Arg Pro Lys Ile Ile Gly Ala Gly
65                  70                  75                  80
Cys Val Ile Met Gly Val Gly Thr Leu Leu Ile Ala Met Pro Gln Phe
                85                  90                  95
Phe Met Glu Gln Tyr Lys Tyr Glu Arg Tyr Ser Pro Ser Ser Asn Ser
            100                 105                 110
Thr Leu Ser Ile Ser Pro Cys Leu Leu Glu Ser Ser Ser Gln Leu Pro
        115                 120                 125
Val Ser Val Met Glu Lys Ser Lys Ser Lys Ile Ser Asn Glu Cys Glu
    130                 135                 140
Val Asp Thr Ser Ser Ser Met Trp Ile Tyr Val Phe Leu Gly Asn Leu
145                 150                 155                 160
Leu Arg Gly Ile Gly Glu Thr Pro Ile Gln Pro Leu Gly Ile Ala Tyr
                165                 170                 175
Leu Asp Asp Phe Ala Ser Glu Asp Asn Ala Ala Phe Tyr Ile Gly Cys
                180                 185                 190
```

534

Val Gln Thr Val Ala Ile Ile Gly Pro Ile Phe Gly Phe Leu Leu Gly
    195   200   205
Ser Leu Cys Ala Lys Leu Tyr Val Asp Ile Gly Phe Val Asn Leu Asp
    210   215   220
His Phe Xaa Val Ser Ala Gln Leu Gly Thr Arg Lys Gly Val Leu Val
225   230   235   240
Cys Leu Val Phe Cys Leu Leu Cys Gln Ser Ile Gly Arg Arg Leu Ser
                245   250   255
Glu Glu His His His Ser Asp Arg Glu Lys Gly
                260   265   267

        <210> 971
        <211> 282
        <212>Amino acid
        <213> Homo sapiens

        <400> 971
Gln Pro Ala Gly Arg Val Glu Ala Phe Cys Lys Phe His Met Trp Ala
1   5   10   15
Glu Gly Met Thr Ser Leu Met Lys Ala Ala Leu Asp Leu Thr Tyr Pro
            20   25   30
Ile Thr Ser Met Phe Ser Gly Ala Gly Phe Asn Ser Ser Ile Phe Ser
        35   40   45
Val Phe Lys Asp Gln Gln Ile Glu Asp Leu Trp Ile Pro Tyr Phe Ala
    50   55   60
Ile Thr Thr Asp Ile Thr Ala Ser Ala Met Arg Val His Thr Asp Gly
65   70   75   80
Ser Leu Trp Arg Tyr Val Arg Ala Ser Met Ser Leu Ser Gly Tyr Met
                85   90   95
Pro Pro Leu Cys Asp Pro Lys Asp Gly His Leu Leu Met Asp Gly Gly
            100   105   110
Tyr Ile Asn Asn Leu Pro Ala Asp Val Ala Arg Ser Met Gly Ala Lys
        115   120   125
Val Val Ile Ala Ile Asp Val Gly Ser Arg Asp Glu Thr Asp Leu Thr
    130   135   140
Asn Tyr Gly Asp Ala Leu Ser Gly Trp Trp Leu Leu Trp Lys Arg Trp
145   150   155   160
Asn Pro Leu Ala Thr Lys Val Lys Val Leu Asn Met Ala Glu Ile Gln
                165   170   175
Thr Arg Leu Ala Tyr Val Cys Cys Val Arg Gln Leu Glu Val Val Lys
            180   185   190
Ser Ser Asp Tyr Cys Glu Tyr Leu Arg Pro Pro Ile Asp Ser Tyr Ser
        195   200   205
Thr Leu Asp Phe Gly Lys Phe Asn Glu Ile Cys Glu Val Gly Tyr Gln
    210   215   220
His Gly Arg Thr Val Phe Asp Ile Trp Gly Arg Ser Gly Val Leu Glu
225   230   235   240
Lys Met Leu Arg Asp Gln Gln Gly Pro Ser Lys Lys Pro Ala Ser Ala
                245   250   255
Val Leu Thr Cys Pro Asn Ala Ser Phe Thr Asp Leu Ala Glu Ile Val
                260   265   270
Ser Arg Ile Glu Pro Ala Lys Pro Ala Met
            275   280   282

        <210> 972
        <211> 167
        <212>Amino acid
        <213> Homo sapiens

<400> 972

```
Leu Trp Val Ile Met Phe Val Ser Tyr Leu Ile Leu Thr Leu Leu His
1               5                   10                  15
Val Gln Thr Ala Val Leu Ala Arg Pro Gly Gly Glu Ser Ile Gly Cys
            20                  25                  30
Asp Asp Tyr Leu Gly Ser Asp Lys Val Val Asp Lys Cys Gly Val Cys
            35                  40                  45
Gly Gly Asp Asn Thr Gly Cys Gln Val Val Ser Gly Val Phe Lys His
        50                  55                  60
Ala Leu Thr Ser Leu Gly Tyr His Arg Val Val Glu Ile Pro Glu Gly
65                  70                  75                  80
Ala Thr Lys Ile Asn Ile Thr Glu Met Tyr Lys Ser Asn Asn Tyr Leu
                85                  90                  95
Ala Leu Arg Ser Arg Ser Gly Arg Ser Ile Ile Asn Gly Asn Trp Ala
            100                 105                 110
Ile Asp Arg Pro Gly Lys Tyr Glu Gly Gly Gly Thr Met Phe Thr Tyr
            115                 120                 125
Lys Arg Pro Asn Glu Ile Ser Ser Thr Ala Gly Glu Ser Phe Leu Ala
            130                 135                 140
Glu Gly Pro Thr Asn Glu Ile Leu Asp Val Tyr Val Ser Leu Asp Val
145                 150                 155                 160
Ser Gly Leu Phe Phe Gly Phe
                165     167
```

<210> 973
<211> 140
<212>Amino acid
<213> Homo sapiens

<400> 973

```
Ile Ser Gly Gly Thr Arg Ser Ala Gly Pro Leu Arg Arg Asn Tyr Asn
1               5                   10                  15
Phe Ile Ala Ala Val Val Glu Lys Val Ala Pro Ser Val Val His Val
            20                  25                  30
Gln Leu Trp Gly Arg Asn Gln Gln Trp Ile Glu Val Val Leu Gln Asn
            35                  40                  45
Gly Ala Arg Tyr Glu Ala Val Val Lys Asp Ile Asp Leu Lys Leu Asp
        50                  55                  60
Leu Ala Val Ile Lys Ile Glu Ser Asn Ala Glu Leu Pro Val Leu Met
65                  70                  75                  80
Leu Gly Arg Ser Ser Asp Leu Arg Ala Gly Glu Phe Val Val Ala Leu
                85                  90                  95
Gly Ser Pro Phe Ser Leu Gln Asn Thr Ala Thr Ala Gly Ile Val Ser
            100                 105                 110
Thr Lys Gln Arg Gly Gly Lys Glu Leu Gly Met Lys Asp Ser Asp Met
            115                 120                 125
Asp Tyr Val Gln Ile Asp Ala Thr Ile Asn Tyr Gly
130                 135                 140
```

<210> 974
<211> 286
<212>Amino acid
<213> Homo sapiens

```
      <400> 974
Pro Arg Val Arg Glu Leu Lys Glu Ile Leu Asp Arg Lys Gly His Phe
  1               5                  10                  15
Ser Glu Asn Glu Thr Arg Trp Ile Ile Gln Ser Leu Ala Ser Ala Ile
             20                  25                  30
Ala Tyr Leu His Asn Asn Asp Ile Val His Arg Asp Leu Lys Leu Glu
         35                  40                  45
Asn Ile Met Val Lys Ser Ser Leu Ile Asp Asp Asn Asn Glu Ile Asn
     50                  55                  60
Leu Asn Ile Lys Val Thr Asp Phe Gly Leu Ala Val Lys Lys Gln Ser
 65                  70                  75                  80
Arg Ser Glu Ala Met Leu Gln Ala Thr Cys Gly Thr Pro Ile Tyr Met
             85                  90                  95
Ala Pro Glu Val Ile Ser Ala His Asp Tyr Ser Gln Gln Cys Asp Ile
            100                 105                 110
Trp Ser Ile Gly Val Val Met Tyr Met Leu Leu Arg Gly Glu Pro Pro
            115                 120                 125
Phe Leu Ala Ser Ser Glu Glu Lys Leu Phe Glu Leu Ile Arg Lys Gly
    130                 135                 140
Glu Leu His Phe Glu Asn Ala Val Trp Asn Ser Ile Ser Asp Cys Ala
145                 150                 155                 160
Lys Ser Val Leu Lys Gln Leu Met Lys Val Asp Pro Ala His Arg Ile
             165                 170                 175
Thr Ala Lys Glu Leu Leu Asp Asn Gln Trp Leu Thr Gly Asn Lys Leu
            180                 185                 190
Ser Ser Val Arg Pro Thr Asn Val Leu Glu Met Met Lys Glu Trp Lys
            195                 200                 205
Asn Asn Pro Glu Ser Val Glu Glu Asn Thr Thr Glu Glu Lys Asn Lys
    210                 215                 220
Pro Ser Thr Glu Glu Lys Leu Lys Ser Tyr Gln Pro Trp Gly Asn Val
225                 230                 235                 240
Pro Glu Thr Asn Tyr Thr Ser Asp Glu Glu Glu Glu Lys Gln Val Gly
            245                 250                 255
Arg Ile Ile Ala Ala Phe Leu Pro Ser Val Lys Tyr Pro His His Thr
            260                 265                 270
Trp Asn Ile Phe Leu Gln Ile Cys Leu Phe Val Val Ser Leu
    275                 280     ♦           285 286
```

```
      <210> 975
      <211> 155
      <212>Amino acid
      <213> Homo sapiens
```

```
      <400> 975
Leu Ser Ile Ser Val Ser Asp Val Ser Leu Ser Asp Glu Gly Gln Tyr
  1               5                  10                  15
Thr Cys Ser Leu Phe Thr Met Pro Val Lys Thr Ser Lys Ala Tyr Leu
             20                  25                  :    30
Thr Val Leu Gly Val Pro Glu Lys Pro Gln Ile Ser Gly Phe Ser Ser
         35                  40                  45
Pro Val Met Glu Gly Asp Leu Met Gln Leu Thr Cys Lys Thr Ser Gly
     50                  55                  60
Ser Lys Pro Ala Ala Asp Ile Arg Trp Phe Lys Asn Asp Lys Glu Ile
 65                  70                  75                  80
```

Lys Asp Val Lys Tyr Leu Lys Glu Glu Asp Ala Asn Arg Lys Thr Phe
                   85   90   95
Thr Val Ser Ser Thr Leu Asp Phe Arg Val Asp Arg Ser Asp Asp Gly
          100   105   110
Val Ala Val Ile Cys Arg Val Asp His Glu Ser Leu Asn Ala Thr Pro
          115   120   125
Gln Val Ala Met Gln Val Leu Glu Met His Tyr Thr Pro Ser Val Lys
          130   135   140
Ile Ile Pro Ser Thr Pro Phe Pro Gln Glu Gly
145   150   155

        <210> 976
        <211> 137
        <212> Amino acid
        <213> Homo sapiens

        <400> 976
Tyr Asn Gln Lys Val Asp Leu Phe Ser Leu Gly Ile Ile Phe Phe Glu
1   5   10   15
Met Ser Tyr His Pro Met Val Thr Ala Ser Glu Arg Ile Phe Val Leu
              20   25   30
Asn Gln Leu Arg Asp Pro Thr Ser Pro Lys Phe Pro Glu Asp Phe Asp
          35   40   45
Asp Gly Glu His Ala Lys Gln Lys Ser Val Ile Ser Trp Leu Leu Asn
      50   55   60
His Asp Pro Ala Lys Arg Pro Thr Ala Thr Glu Leu Leu Lys Ser Glu
 65   70   75   80
Leu Leu Pro Pro Pro Gln Met Glu Glu Ser Glu Leu His Glu Val Leu
              85   90   95
His His Thr Leu Thr Asn Val Asp Gly Lys Ala Tyr Arg Thr Ile Asp
          100   105   110
Gly Pro Arg Ser Phe Arg Gln Arg Ile Ser Pro Ala Ile Ala Tyr Thr
          115   120   125
Tyr Asp Ser Asp Ile Leu Lys Gly Asn
          130   135   137

        <210> 977
        <211> 246
        <212> Amino acid
        <213> Homo sapiens

        <400> 977
Asp Gln Asp Tyr Lys Tyr Asp Ser Thr Ser Asp Asp Ser Asn Phe Leu
1   5   10   15
Asn Pro Pro Arg Gly Trp Asp His Thr Ala Pro Gly His Arg Thr Phe
              20   25   30
Glu Thr Lys Asp Gln Pro Glu Tyr Asp Ser Thr Asp Gly Glu Gly Asp
          35   40   45
Trp Ser Leu Trp Ser Val Cys Ser Val Thr Cys Gly Asn Gly Asn Gln
      50   55   60
Lys Arg Thr Arg Ser Cys Gly Tyr Ala Cys Thr Ala Thr Glu Ser Arg
65   70   75   80
Thr Cys Asp Arg Pro Asn Cys Pro Gly Ile Glu Asp Thr Phe Arg Thr
              85   90   95

538

```
Ala Ala Thr Glu Val Ser Leu Leu Ala Gly Ser Glu Glu Phe Asn Ala
        100·                    105                 110
Thr Lys Leu Phe Glu Val Asp Thr Asp Ser Cys Glu Arg Trp Met Ser
        115                     120                 125
Cys Lys Ser Glu Phe Leu Lys Lys Tyr Met His Lys Val Met Asn Asp
        130                     135                 140
Leu Pro Ser Cys Pro Cys Ser Tyr Pro Thr Glu Val Ala Tyr Ser Thr
145                         150                 155                 160
Ala Asp Ile Phe Asp Arg Ile Lys Arg Lys Asp Phe Arg Trp Lys Asp
                165                 170                 175
Ala Ser Gly Pro Lys Glu Lys Leu Glu Ile Tyr Lys Pro Thr Ala Arg
                180                 185                 190
Tyr Cys Ile Arg Ser Met Leu Ser Leu Glu Ser Thr Thr Leu Ala Ala
        195                     200                 205
Gln His Cys Cys Tyr Gly Asp Asn Met Gln Leu Ile Thr Arg Gly Lys
        210                     215                 220
Gly Ala Gly Thr Pro Asn Leu Ile Ser Thr Glu Phe Ser Ala Glu Leu
225                         230                 235                 240
His Tyr Lys Val Asp Val
            245 246


    <210> 978
    <211> 203
    <212>Amino acid
    <213> Homo sapiens




    <400> 978
Glu Ser Glu Glu Asn Gly Glu Ser Ala Met Asp Ser Thr Val Ala Lys
 1           5               10                  15
Glu Gly Thr Asn Val Pro Leu Val Ala Ala Gly Pro Cys Asp Asp Glu
        20                  25                  30
Gly Ile Val Thr Ser Thr Gly Ala Lys Glu Glu Asp Glu Glu Gly Glu
        35                  40                  45
Asp Val Val Thr Ser Thr Gly Arg Gly Asn Glu Ile Gly His Ala Ser
    50                  55                  60
Thr Cys Thr Gly Leu Gly Glu Glu Ser Glu Gly Val Leu Ile Cys Glu
65                  70                  75                  80
Ser Ala Glu Gly Asp Ser Gln Ile Gly Thr Val Val Glu His Val Glu
            85                  90                  95
Ala Glu Ala Gly Ala Ala Ile Met Asn Ala Asn Glu Asn Asn Val Asp
        100                 105                 110
Ser Met Ser Gly Thr Glu Lys Gly Ser Lys Asp Thr Asp Ile Cys Ser
        115                 120                 125
Ser Ala Lys Gly Ile Val Glu Ser Ser Val Thr Ser Ala Val Ser Gly
        130                 135                 140
Lys Asp Glu Val Thr Pro Val Pro Gly Gly Cys Glu Gly Pro Met Thr
145                 150                 155                 160
Ser Ala Ala Ser Asp Gln Ser Asp Ser Gln Leu Glu Lys Val Glu Asp
                165                 170                 175
Thr Thr Ile Ser Thr Gly Leu Val Gly Gly Ser Tyr Asp Val Leu Val
            180                 185                 190
Ser Gly Glu Val Pro Glu Cys Glu Val Ala His
        195                 200     203


    <210> 979
    <211> 94
    <212>Amino acid
    <213> Homo sapiens
```

                                      539

```
      <400> 979
Val Cys Ile Ile Cys Leu Ile Phe Ser Tyr Tyr Ser Phe Asp Ser Ala
1               5                   10                  15
Leu Gln Ser Ala Lys Ser Ser Leu Gly Gly Asn Asp Glu Leu Ser Ala
            20                  25                  30
Thr Phe Leu Glu Met Lys Gly His Phe Tyr Met Tyr Ala Gly Ser Leu
        35                  40                  45
Leu Leu Lys Met Gly Gln His Gly Asn Asn Val Gln Trp Arg Ala Leu
        50                  55                  60
Ser Glu Leu Ala Ala Leu Cys Tyr Leu Ile Ala Phe Gln Val Ser Leu
65                  70                  75                  80
Pro Leu Gly Ala Ile Asp Ile Ser Arg Ser Leu Asp Val Phe
                85                  90                  94
```

```
      <210> 980
      <211> 226
      <212>Amino acid
      <213> Homo sapiens
```

```
      <400> 980
Gln His Pro Ser Gln Glu Lys Pro Gln Val Leu Thr Pro Ser Pro Arg
1               5                   10                  15
Lys Gln Lys Leu Asn Arg Lys Tyr Arg Ser His His Asp Gln Met Ile
            20                  25                  30
Cys Lys Cys Leu Ser Leu Ser Ile Ser Tyr Ser Ala Thr Ile Gly Gly
        35                  40                  45
Leu Thr Thr Ile Ile Gly Thr Ser Thr Ser Leu Ile Phe Leu Glu His
        50                  55                  60
Phe Asn Asn Gln Tyr Pro Ala Ser Glu Val Val Asn Phe Gly Thr Trp
65                  70                  75                  80
Phe Leu Phe Ser Phe Pro Ile Ser Leu Ile Met Leu Val Val Ser Trp
                85                  90                  95
Phe Trp Met His Trp Leu Phe Leu Gly Cys Asn Phe Lys Glu Thr Cys
            100             105             110
Ser Leu Ser Lys Lys Lys Thr Lys Arg Glu Gln Leu Ser Glu Lys
        115             120             125
Arg Ile Gln Glu Glu Tyr Glu Lys Leu Gly Asp Ile Ser Tyr Pro Glu
    130             135             140
Met Val Thr Gly Phe Phe Phe Ile Leu Met Thr Val Leu Trp Phe Thr
145             150             155             160
Arg Glu Pro Gly Phe Val Pro Gly Trp Asp Ser Phe Phe Glu Lys Lys
            165             170             175
Gly Tyr Arg Thr Asp Ala Thr Val Ser Val Phe Leu Gly Phe Leu Leu
        180             185             190
Phe Leu Ile Pro Ala Lys Lys Pro Cys Phe Gly Lys Lys Asn Asp Gly
        195             200             205
Glu Asn Gln Glu His Ser Leu Gly Thr Glu Pro Ile Ile Thr Trp Lys
        210             215             220
Asp Phe
225 226
```

```
      <210> 981
      <211> 163
```

540

<212>Amino acid
<213> Homo sapiens

<400> 981
Leu Glu Arg Glu Gly Asp Lys Gly Thr Pro Val Leu Arg Gly Phe Ser
1   5   10   15
Ser Val Ser Gly Ser Trp Ser Arg Arg Met Pro Pro Phe Leu Leu Leu
            20   25   30
Thr Cys Leu Phe Ile Thr Gly Thr Ser Val Ser Pro Val Ala Leu Asp
        35   40   45
Pro Cys Ser Ala Tyr Ile Ser Leu Asn Glu Pro Trp Arg Asn Thr Asp
    50   55   60
His Gln Leu Asp Glu Ser Gln Gly Pro Pro Leu Cys Asp Asn His Val
65   70   75   80
Asn Gly Glu Trp Tyr His Phe Thr Gly Met Ala Gly Asp Ala Met Pro
                85   90   95
Thr Phe Cys Ile Pro Glu Asn His Cys Gly Thr His Ala Pro Val Trp
            100   105   110
Leu Asn Gly Ser His Pro Leu Glu Gly Asp Gly Ile Val Gln Arg Gln
        115   120   125
Ala Cys Ala Ser Phe Asn Gly Asn Cys Cys Leu Trp Asn Thr Thr Val
    130   135   140
Glu Val Lys Ala Cys Pro Gly Gly Tyr Tyr Val Tyr Arg Leu Thr Lys
145   150   155   160
Pro Ser Val
        163

<210> 982
<211> 327
<212>Amino acid
<213> Homo sapiens

<400> 982
Cys Gly Arg Thr Met Ser Asp Ile Arg His Ser Leu Leu Arg Arg Asp
1   5   10   15
Ala Leu Ser Ala Ala Lys Glu Val Leu Tyr His Leu Asp Ile Tyr Phe
            20   25   30
Ser Ser Gln Leu Gln Ser Ala Pro Leu Pro Ile Val Asp Lys Gly Pro
        35   40   45
Val Glu Leu Leu Glu Glu Phe Val Phe Gln Val Pro Lys Glu Arg Ser
    50   55   60
Ala Gln Pro Lys Arg Leu Asn Ser Leu Gln Glu Leu Gln Leu Leu Glu
65   70   75   80
Ile Met Cys Asn Tyr Phe Gln Glu Gln Thr Lys Asp Ser Val Arg Gln
                85   90   95
Ile Ile Phe Ser Ser Leu Phe Ser Pro Gln Gly Asn Lys Ala Asp Asp
            100   105   110
Ser Arg Met Ser Leu Leu Gly Lys Leu Val Ser Met Ala Val Ala Val
        115   120   125
Cys Arg Ile Pro Val Leu Glu Cys Ala Ala Ser Trp Leu Gln Arg Thr
    130   135   140
Pro Val Val Tyr Cys Val Arg Leu Ala Lys Ala Leu Val Asp Asp Tyr
145   150   155   160
Cys Cys Leu Val Pro Gly Ser Ile Gln Thr Leu Lys Gln Ile Phe Ser
                165   170   175

541

```
Ala Ser Pro Arg Phe Cys Cys Gln Phe Ile Thr Ser Val Thr Ala Leu
            180             185             190
Tyr Asp Leu Ser Ser Asp Asp Leu Ile Pro Pro Met Asp Leu Leu Glu
            195             200             205
Met Ile Val Thr Trp Ile Phe Glu Asp Pro Arg Leu Ile Leu Ile Thr
    210             215             220
Phe Leu Asn Thr Pro Ile Ala Ala Asn Leu Pro Ile Gly Phe Leu Glu
225             230             235             240
Leu Thr Pro Leu Val Gly Leu Ile Arg Trp Cys Val Lys Ala Pro Leu
            245             250             255
Ala Tyr Lys Arg Lys Lys Lys Pro Pro Leu Ser Asn Gly His Val Ser
            260             265             270
Asn Lys Val Thr Lys Asp Pro Gly Val Gly Met Asp Arg Asp Ser His
    275             280             285
Leu Leu Tyr Ser Lys Leu His Leu Ser Val Leu Gln Val Leu Met Thr
    290             295             300
Leu Gln Leu His Leu Thr Glu Lys Asn Leu Tyr Gly Pro Pro Gly Ala
305             310             315             320
Asp Pro Leu Arg Pro His Gly
                325     327


        <210> 983
        <211> 110
        <212>Amino acid
        <213> Homo sapiens




        <400> 983
Ser Ala Cys Ser Thr Gly Pro Glu Leu Pro Gly Arg Ala Thr Arg Ser
1               5               10              15
Leu Thr Arg Pro Ala Asn Gln Lys Gly Cys Asp Gly Asp Arg Leu Tyr
            20              25              30
Tyr Asp Gly Cys Ala Met Ile Ala Met Asn Gly Ser Val Phe Ala Gln
        35              40              45
Gly Ser Gln Phe Ser Leu Asp Asp Val Glu Val Leu Thr Ala Thr Leu
    50              55              60
Asp Leu Glu Asp Val Arg Ser Tyr Arg Ala Glu Ile Ser Ser Arg Asn
65                  70              75                  80
Leu Ala Val Ser Ala Pro Val Asp Thr Cys Val Gly Cys Ser Ser Lys
            85              90              95
Thr Trp Lys Val Ala Pro Phe Val Arg Ala Trp Trp Arg Pro
            100             105             110


        <210> 984
        <211> 80
        <212>Amino acid
        <213> Homo sapiens




        <400> 984
Ala Pro Leu Ser Arg Leu Cys Phe Pro Gln Val Leu Val Asn Glu Gly
1               5               10              15
Gly Gly Phe Asp Arg Ala Ser Gly Ser Phe Val Ala Pro Val Arg Gly
            20              25              30
Val Tyr Ser Phe Arg Phe His Val Val Lys Val Tyr Asn Arg Gln Thr
        35              40              45
```

```
Val Gln Val Thr Ser Ala Leu Ala Pro Ile Pro Gly Ser Gly Gly Trp
    50                  55                  60
Gly Gly Gly Arg Arg Gly Ala Gln Leu Thr Ser Gly Trp Thr Leu His
65                  70                  75                  80
```

<210> 985
<211> 235
<212>Amino acid
<213> Homo sapiens

<400> 985

```
Pro His Ile Ile Gly Ala Glu Asp Asp Asp Phe Gly Thr Glu His Glu
1              5                  10                  15
Gln Ile Asn Gly Gln Cys Ser Cys Phe Gln Ser Ile Glu Leu Leu Lys
              20                  25                  30
Ser Arg Pro Ala His Leu Ala Val Phe Leu Arg His Val Val Ser Gln
          35                  40                  45
Phe Asp Pro Ala Thr Leu Leu Cys Tyr Leu Tyr Ser Asp Leu Tyr Lys
    50                  55                  60
His Thr Asn Ser Lys Glu Thr Arg Arg Ile Phe Leu Glu Phe His Gln
65                  70                  75                  80
Phe Phe Leu Asp Arg Ser Ala His Leu Lys Val Ser Val Pro Asp Glu
              85                  90                  95
Met Ser Ala Asp Leu Glu Lys Arg Arg Pro Glu Leu Ile Pro Glu Asp
              100                 105                 110
Leu His Arg His Tyr Ile Gln Thr Met Gln Glu Arg Val His Pro Glu
          115                 120                 125
Val Gln Arg His Leu Glu Asp Phe Arg Gln Lys Arg Ser Met Gly Leu
    130                 135                 140
Thr Leu Ala Glu Ser Glu Leu Thr Lys Leu Asp Ala Glu Arg Asp Lys
145                 150                 155                 160
Asp Arg Leu Thr Leu Glu Lys Glu Arg Thr Cys Ala Glu Gln Ile Val
              165                 170                 175
Ala Lys Ile Glu Glu Val Leu Met Thr Ala Gln Ala Val Glu Glu Asp
              180                 185                 190
Lys Ser Ser Thr Met Gln Tyr Val Ile Leu Met Tyr Met Lys His Leu
          195                 200                 205
Gly Val Lys Val Lys Glu Pro Arg Asn Leu Glu His Lys Arg Gly Arg
    210                 215                 220
Ile Gly Phe Leu Pro Lys Ile Lys Gln Ser Met
225                 230                 235
```

<210> 986
<211> 140
<212>Amino acid
<213> Homo sapiens

<400> 986

```
Ser Pro Gly Thr Gly Arg Gly Pro Gly Pro Thr Ser Phe Val Cys Leu
1              5                  10                  15
Pro Thr Pro Gln Cys Pro Phe Ile Asp Asp Phe Ile Leu Ala Leu His
              20                  25                  30
```

543

```
Arg Lys Ile Lys Asn Glu Pro Val Val Phe Pro Glu Gly Pro Glu Ile  .
        35                  40                  45
Ser Glu Glu Leu Lys Asp Leu Ile Leu Lys Met Leu Asp Lys Asn Pro
    50                  55                  60
Glu Thr Arg Ile Gly Val Pro Asp Ile Lys Leu His Pro Trp Val Thr
65                  70                  75                  80
Lys Asn Gly Glu Glu Pro Leu Pro Ser Glu Glu Glu His Cys Ser Val
                85                  90                  95
Val Glu Val Thr Glu Glu Glu Val Lys Asn Ser Val Arg Leu Ile Pro
                100                 105                 110
Ser Trp Thr Thr Val Ile Leu Val Lys Ser Met Leu Arg Lys Arg Ser
        115                 120                 125
Phe Gly Asn Pro Phe Glu Pro Gln Ala Arg Met Ala
    130                 135                 140
```

```
<210> 987
<211> 242
<212>Amino acid
<213> Homo sapiens
```

```
<400> 987
His Ala Ser Gly Ile Lys Ile Asp Lys Thr Ser Asp Gly Pro Lys Leu
1               5                   10                  15
Phe Leu Thr Glu Glu Asp Gln Lys Lys Leu His Asp Phe Glu Glu Gln
                20                  25                  30
Cys Val Glu Met Tyr Phe Asn Glu Lys Asp Asp Lys Phe His Ser Gly
        35                  40                  45
Ser Glu Glu Arg Ile Arg Val Thr Phe Glu Arg Val Glu Gln Met Cys
    50                  55                  60
Ile Gln Ile Lys Glu Val Gly Asp Arg Val Asn Tyr Ile Lys Arg Ser
65                  70                  75                  80
Leu Gln Ser Leu Asp Ser Gln Ile Gly His Leu Gln Asp Leu Ser Ala
            85                  90                  95
Leu Thr Val Asp Thr Leu Lys Thr Leu Thr Ala Gln Lys Ala Ser Glu
                100                 105                 110
Ala Ser Lys Val His Asn Glu Ile Thr Arg Glu Leu Ser Ile Ser Lys
        115                 120                 125
His Leu Ala Gln Asn Leu Ile Asp Asp Gly Pro Val Arg Pro Ser Val
    130                 135                 140
Trp Lys Lys His Gly Val Val Asn Thr Leu Ser Ser Ser Leu Pro Gln
145                 150                 155                 160
Gly Asp Leu Glu Ser Asn Asn Pro Phe His Cys Asn Ile Leu Met Lys
                165                 170                 175
Asp Asp Lys Asp Pro Gln Cys Asn Ile Phe Gly Gln Asp Leu Pro Ala
            180                 185                 190
Val Pro Gln Arg Lys Glu Phe Asn Phe Pro Glu Ala Gly Ser Ser Ser
        195                 200                 205
Gly Ala Leu Phe Pro Ser Ala Val Ser Pro Pro Glu Leu Arg Gln Arg
    210                 215                 220
Leu His Gly Val Glu Leu Leu Lys Ile Phe Asn Lys Lys Gln Lys Lys
225                 230                 235                 240
Arg Ala
242
```

```
<210> 988
<211> 154
<212>Amino acid
<213> Homo sapiens
```

```
        <400> 988
Cys Cys Arg Trp Ile Asp Cys Phe Ala Leu Tyr Asp Gln Gln Glu Glu
1               5                   10                  15
Leu Val Arg His Ile Glu Lys Val His Ile Asp Gln Arg Lys Gly Glu
            20                  25                  30
Asp Phe Thr Cys Phe Trp Ala Gly Cys Pro Arg Arg Tyr Lys Pro Phe
            35                  40                  45
Asn Ala Arg Tyr Lys Leu Leu Ile His Met Arg Val His Ser Gly Glu
        50                  55                  60
Lys Pro Asn Lys Cys Thr Phe Glu Gly Cys Glu Lys Ala Phe Ser Arg
65                  70                  75                  80
Leu Glu Asn Leu Lys Ile His Leu Arg Ser His Thr Gly Glu Lys Pro
                85                  90                  95
Tyr Leu Cys Gln His Pro Gly Cys Gln Lys Ala Phe Ser Asn Ser Ser
            100                 105                 110
Asp Arg Ala Lys His Gln Arg Thr His Leu Asp Thr Lys Pro Tyr Ala
        115                 120                 125
Cys Gln Ile Pro Gly Cys Thr Lys Arg Tyr Thr Asp Pro Ser Ser Leu
    130                 135                 140
Arg Lys His Val Lys Ala His Ser Ser Lys
145                 150                 154
```

```
        <210> 989
        <211> 65
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 989
Leu Pro Leu Leu Trp Thr Leu Ser Asp Phe Gly Gly Thr Met Asp Gln
1               5                   10                  15
Ser Gly Met Glu Ile Pro Val Thr Leu Ile Ile Lys Ala Pro Asn Gln
            20                  25                  30
Lys Tyr Ser Asp Gln Thr Ile Ser Cys Phe Leu Asn Trp Thr Val Gly
        35                  40                  45
Lys Leu Lys Thr His Leu Ser Asn Val Tyr Pro Ser Lys Pro Val Ser
        50                  55                  60
Val
65
```

```
        <210> 990
        <211> 297
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 990
Ala Gly Thr Arg Met Cys Val Val Ala Ala Ala Glu Glu Leu Val Cys
1               5                   10                  15
Gly Ala Arg Gly Leu Trp Met Arg Arg Thr Arg Arg Pro Arg Phe Val
            20                  25                  30
```

```
Leu Met Asn Lys Met Asp Asp Leu Asn Leu His Tyr Arg Phe Leu Asn
        35              40              45
Trp Arg Arg Arg Ile Arg Glu Ile Arg Glu Val Arg Ala Phe Arg Tyr
    50              55              60
Gln Glu Arg Phe Lys His Ile Leu Val Asp Gly Asp Thr Leu Ser Tyr
65              70              75              80
His Gly Asn Ser Gly Glu Val Gly Cys Tyr Val Ala Ser Arg Pro Leu
            85              90              95
Thr Lys Asp Ser Asn Tyr Phe Glu Val Ser Ile Val Asp Ser Gly Val
            100             105             110
Arg Gly Thr Ile Ala Val Gly Leu Val Pro Gln Tyr Tyr Ser Leu Asp
        115             120             125
His Gln Pro Gly Trp Leu Pro Asp Ser Val Ala Tyr His Ala Asp Asp
    130             135             140
Gly Lys Leu Tyr Asn Gly Arg Ala Lys Gly Arg Gln Phe Gly Ser Lys
145             150             155             160
Cys Asn Ser Gly Asp Arg Ile Gly Cys Gly Ile Glu Pro Val Ser Phe
            165             170             175
Asp Val Gln Thr Ala Gln Ile Phe Phe Thr Lys Asn Gly Lys Arg Val
            180             185             190
Gly Ser Thr Ile Met Pro Met Ser Pro Asp Gly Leu Phe Pro Ala Val
        195             200             205
Gly Met His Ser Leu Gly Glu Glu Val Arg Leu His Leu Asn Ala Glu
    210             215             220
Leu Gly Arg Glu Asp Asp Ser Val Met Met Val Asp Ser Tyr Glu Asp
225             230             235             240
Glu Trp Gly Arg Leu His Asp Val Arg Val Cys Gly Thr Leu Leu Glu
            245             250             255
Tyr Leu Gly Lys Gly Lys Ser Ile Val Asp Val Gly Leu Ala Gln Ala
        260             265             270
Arg His Pro Leu Ser Thr Arg Ser His Tyr Phe Glu Val Glu Ile Val
    275             280             285
Asp Pro Gly Glu Lys Cys Tyr Ile Ala
290             295     297
```

```
        <210> 991
        <211> 207
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 991
Gln Gln Ala Glu Glu His Leu Ala Ala Tyr Ser Val Ser Asp Ser Asp
1               5               10              15
Ser Gly Lys Asp Pro Ser Met Glu Cys Cys Arg Arg Ala Thr Pro Gly
            20              25              30
Thr Leu Leu Leu Phe Leu Ala Phe Leu Leu Leu Ser Ser Arg Thr Ala
        35              40              45
Arg Ser Glu Glu Asp Arg Asp Gly Leu Trp Asp Ala Trp Gly Pro Trp
    50              55              60
Ser Glu Cys Ser Arg Thr Cys Gly Gly Gly Ala Ser Tyr Ser Leu Arg
65              70              75              80
Arg Cys Leu Ser Ser Lys Ser Cys Glu Gly Arg Asn Ile Arg Tyr Arg
            85              90              95
Thr Cys Ser Asn Val Asp Cys Pro Pro Glu Ala Gly Asp Phe Arg Ala
            100             105             110
Gln Gln Cys Ser Ala His Asn Asp Val Lys His His Gly Gln Phe Tyr
        115             120             125
Glu Trp Leu Pro Val Ser Asn Asp Pro Asp Asn Pro Cys Ser Leu Lys
130             135             140
```

```
Cys Gln Ala Lys Gly Thr Thr Leu Val Val Glu Leu Ala Pro Lys Val
145             150             155             160
Leu Asp Gly Thr Arg Cys Tyr Thr Glu Ser Leu Asp Met Cys Ile Ser
            165             170             175
Gly Leu Cys Gln Val Ser Ala Asp Leu Phe Ser Phe Asn Leu Ser Arg
            180             185             190
Gly Phe Gln Cys Leu Cys Val Asn Gly Leu His Ser Leu Thr Leu
            195             200             205 207
```

```
<210> 992
<211> 184
<212> Amino acid
<213> Homo sapiens
```

```
<400> 992
Arg Leu Leu Arg Gln Glu Leu Val Val Leu Cys His Leu His His Pro
1           5               10              15
Ser Leu Ile Ser Leu Leu Ala Ala Gly Ile Arg Pro Arg Met Leu Val
            20              25              30
Met Glu Leu Ala Ser Lys Gly Ser Leu Asp Arg Leu Leu Gln Gln Asp
        35              40              45
Lys Ala Ser Leu Thr Arg Thr Leu Gln His Arg Ile Ala Leu His Val
    50              55              60
Ala Asp Gly Leu Arg Tyr Leu His Ser Ala Met Ile Ile Tyr Arg Asp
65              70              75              80
Leu Lys Pro His Asn Val Leu Leu Phe Thr Leu Tyr Pro Asn Ala Ala
            85              90              95
Ile Ile Ala Lys Ile Ala Asp Tyr Gly Ile Ala Gln Tyr Cys Cys Arg
            100             105             110
Met Gly Ile Lys Thr Ser Glu Gly Thr Pro Gly Phe Arg Ala Pro Glu
        115             120             125
Val Ala Arg Gly Asn Val Ile Tyr Asn Gln Gln Ala Asp Val Tyr Ser
    130             135             140
Phe Gly Leu Leu Leu Tyr Asp Ile Leu Thr Thr Gly Gly Arg Ile Val
145             150             155             160
Glu Gly Leu Lys Phe Pro Asn Glu Phe Asp Glu Leu Glu Ile Gln Gly
            165             170             175
Lys Leu Pro Asp Pro Val Lys Glu
            180             184
```

```
<210> 993
<211> 144
<212> Amino acid
<213> Homo sapiens
```

```
<400> 993
Lys Ala Ser Asn Ser Thr His Glu Phe Arg Ile Gly Leu Pro Glu Gly
1           5               10              15
Trp Glu Ser Glu Lys Lys Ala Val Ile Pro Leu Gly Ile Gly Pro Pro
            20              25              30
Leu Thr Leu Ile Cys Leu Gly Val Leu Gly Gly Ile Leu Ile Tyr Gly
        35              40              45
Arg Lys Gly Phe Gln Thr Ala His Phe Tyr Leu Lys Asp Ser Pro Ser
    50              55              60
```

547

```
Pro Lys Val Ile Ser Thr Pro Pro Pro Ile Phe Pro Ile Ser Lys
65              70              75              80
Glu Val Gly Pro Ile Pro Ile Lys His Phe Pro Lys His Val Ala Asn
                85              90              95
Leu His Ala Ser Arg Gly Phe Thr Glu Lys Phe Glu Thr Leu Lys Lys
            100             105             110
Phe Tyr Gln Glu Gly Gln Ser Cys Thr Val Asp Leu Gly Ile Thr Ala
        115             120             125
Asn Ser Ser Asn His Pro Asp Asn Arg His Arg Asn Arg Ser Leu Ile
    130             135             140             144
```

```
    <210> 994
    <211> 147
    <212>Amino acid
    <213> Homo sapiens
```

```
    <400> 994
Ser Phe Pro Asp Arg Thr Ala Ser Leu Val Leu Leu Ser Val Pro Val
1               5               10              15
Gly Gln Ala Gly Met Gln Gln Arg Gly Leu Ala Ile Val Ala Leu Ala
            20              25              30
Val Cys Ala Ala Leu His Ala Ser Pro Ala Ile Leu Pro Ile Ala Ser
        35              40              45
Ser Cys Cys Thr Glu Val Ser His His Ile Ser Arg Arg Leu Leu Glu
    50              55              60
Arg Val Asn Met Cys Arg Ile Gln Arg Ala Asp Gly Asp Cys Asp Leu
65              70              75              80
Ala Ala Val Ile Leu His Val Lys Arg Arg Arg Ile Cys Val Ser Pro
            85              90              95
His Asn His Thr Val Lys Gln Trp Met Lys Val Gln Ala Ala Lys Lys
            100             105             110
Asn Gly Lys Gly Asn Val Cys His Arg Lys Lys His His Gly Lys Arg
        115             120             125
Asn Ser Asn Arg Ala His Gln Gly Lys His Glu Thr Tyr Gly His Lys
    130             135             140
Thr Pro Tyr
145     147
```

```
    <210> 995
    <211> 245
    <212>Amino acid
    <213> Homo sapiens
```

```
    <400> 995
Phe Glu Gln Pro Gly Asn Pro Gly Asp Pro Arg Val Arg Thr Pro Pro
1               5               10              15
Pro Trp Gly Pro His Phe Phe Ala Leu Ile Pro Ser Ser Pro Lys Glu
            20              25              30
Val Pro Ala Thr Pro Ser Ser Arg Arg Asp Pro Ile Ala Pro Thr Ala
        35              40              45
Thr Leu Leu Ser Lys Lys Thr Pro Ala Thr Leu Ala Pro Lys Glu Ala
    50              55              60
```

548

```
Leu Ile Pro Pro Ala Met Thr Val Pro Ser Pro Lys Lys Thr Pro Ala
65              70              75              80
Ile Pro Thr Pro Lys Glu Ala Pro Ala Thr Pro Ser Ser Lys Glu Ala
            85              90              95
Ser Ser Pro Pro Ala Val Thr Pro Ser Thr Tyr Lys Gly Ala Pro Ser
            100             105             110
Pro Lys Glu Leu Leu Ile Pro Pro Ala Val Thr Ser Pro Ser Pro Lys
        115             120             125
Glu Ala Pro Thr Pro Pro Ala Val Thr Pro Pro Ser Pro Glu Lys Gly
        130             135             140
Pro Ala Thr Pro Ala Pro Lys Gly Thr Pro Thr Ser Pro Pro Val Thr
145             150             155             160
Pro Ser Ser Leu Lys Asp Ser Pro Thr Ser Pro Ala Ser Val Thr Cys
            165             170             175
Lys Met Gly Ala Thr Val Pro Gln Ala Ser Lys Gly Leu Pro Ala Lys .
        180             185             190
Lys Gly Pro Thr Ala Leu Lys Glu Val Leu Val Ala Pro Ala Pro Glu
        195             200             205
Ser Thr Pro Ile Ile Thr Ala Pro Thr Arg Lys Gly Pro Gln Thr Lys
    210             215             220
Lys Ser Ser Ala Thr Ser Pro Pro Ile Cys Pro Asp Pro Ser Ala Lys
225             230             235             240
Asn Gly Ser Lys Gly
            245
```

```
<210> 996
<211> 25
<212>Amino acid
<213> Homo sapiens
```

```
<400> 996
Phe Phe Leu Lys Ile Gln Gly Leu Gly Trp Ala Arg Trp Leu Thr Pro
 1            5              10              15
Val Ile Pro Val Leu Trp Glu Ala Glu
            20              25
```

```
<210> 997
<211> 56
<212>Amino acid
<213> Homo sapiens
```

```
<400> 997
Ala Gly Phe Gly Tyr Gly Leu Pro Ile Ser Arg Leu Tyr Ala Lys Tyr
 1            5              10              15
Phe Gln Gly Asp Leu Asn Leu Tyr Ser Leu Ser Gly Tyr Gly Thr Asp
            20              25              30
Ala Ile Ile Tyr Leu Lys Val Ser Leu Glu Phe Asn Ser Lys Ile Leu
        35              40              45
Phe Leu Lys Pro Leu Leu Leu Leu
    50              55  56
```

```
<210> 998
<211> 198
```

<212>Amino acid
<213> Homo sapiens

<400> 998
Trp Met Arg Ala Pro Met Leu Gln Lys Gln Gln Ala Pro Arg Met Asp
1   5   10   15
Thr Pro Pro Pro Glu Glu Arg Leu Glu Lys Gln Asn Glu Lys Leu Asn
            20   25   30
Asn Gln Glu Glu Glu Thr Glu Phe Lys Glu Leu Asp Gly Leu Arg Glu
        35   40   45
Ala Leu Ala Asn Leu Arg Gly Leu Ser Glu Glu Glu Arg Ser Glu Lys
    50   55   60
Ala Met Leu Arg Ser Arg Ile Glu Glu Gln Ser Gln Leu Ile Cys Ile
65   70   75   80
Leu Lys Arg Arg Ser Asp Glu Ala Leu Glu Arg Cys Gln Ile Leu Glu
                85   90   95
Leu Leu Asn Ala Glu Leu Glu Glu Lys Met Met Gln Glu Ala Glu Lys
            100   105   110
Leu Lys Ala Gln Gly Glu Tyr Ser Arg Lys Leu Glu Glu Arg Phe Met
    115   120   125
Thr Leu Ala Ala Asn His Glu Leu Met Leu Arg Phe Lys Asp Glu Tyr
    130   135   140
Lys Ser Glu Asn Ile Lys Leu Arg Glu Glu Asn Glu Lys Leu Arg Leu
145   150   155   160
Glu Asn Asn Ser Leu Phe Ser Gln Ala Leu Lys Asp Glu Glu Ala Lys
                165   170   175
Val Leu Gln Leu Thr Val Arg Cys Glu Ala Leu Thr Gly Glu Leu Glu
            180   185   190
Thr Leu Lys Glu Arg Cys
        195   198

<210> 999
<211> 79
<212>Amino acid
<213> Homo sapiens

<400> 999
Asp Pro Gly Ala Ser His Ala Ser Val Gln Val Gln Val Leu Lys Glu
1   5   10   15
Gln Leu Phe Ala Gly Arg Met Pro Ser Pro Phe Arg Ser Cys Ala Leu
            20   25   30
Met Gly Met Cys Gly Ser Arg Ser Ala Asp Asn Leu Ser Cys Pro Ser
        35   40   45
Pro Leu Asn Val Met Glu Pro Val Ser Phe Phe Pro Leu Lys Ser Leu
    50   55   60
Gly Lys Gly Met Ile Gln His Phe Arg His Ile Val Ser Leu Val
65   70   75   79

<210> 1000
<211> 206
<212>Amino acid
<213> Homo sapiens

<400> 1000

Val	Thr	Thr	Thr	Thr	His	Ser	Val	Gly	Arg	Gly	His	Glu	Leu	Gln	Leu
1				5					10					15	

Leu Asn Glu Glu Leu Arg Asn Ile Glu Leu Glu Cys Gln Asn Ile Met
         20   25   30

Gln Ala His Arg Leu Gln Lys Val Thr Asp Gln Tyr Gly Asp Ile Trp
      35   40   45

Thr Leu His Asp Gly Gly Phe Arg Asn Tyr Asn Thr Ser Ile Asp Met
   50   55   60

Gln Arg Gly Lys Leu Asp Asp Ile Met Glu His Pro Glu Lys Ser Asp
65   70   75   80

Lys Asp Ser Ser Ser Ala Tyr Asn Thr Ala Glu Ser Cys Arg Ser Thr
            85   90   95

Pro Leu Thr Val Asp Arg Ser Pro Asp Ser Ser Leu Pro Arg Val Ile
         100   105   110

Asn Leu Thr Asn Lys Lys Asn Leu Arg Ser Thr Met Ala Ala Thr Gln
         115   120   125

Ser Ser Ser Gly Gln Ser Ser Lys Glu Ser Thr Ser Thr Lys Ala Lys
      130   135   140

Thr Thr Glu Gln Gly Cys Ser Ala Glu Ser Lys Glu Lys Val Leu Glu
145   150   155   160

Gly Ser Lys Leu Pro Asp Gln Glu Lys Ala Val Ser Glu His Ile Pro
            165   170   175

Tyr Leu Ser Pro Tyr His Ser Ser Ser Tyr Arg Tyr Ala Asn Ile Pro
         180   185   190

Ala His Ala Arg His Tyr Gln Ser Tyr Met Gln Leu Ile Gln
      195   200   205 206

<210> 1001
<211> 138
<212>Amino acid
<213> Homo sapiens

<400> 1001

Val	Trp	Gly	Cys	Leu	Ala	Thr	Val	Ser	Thr	His	Lys	Lys	Ile	Gln	Gly
1				5					10					15	

Leu Pro Phe Gly Asn Cys Leu Pro Val Ser Asp Gly Pro Phe Asn Asn
         20   25   30

Ser Thr Gly Ile Pro Phe Phe Tyr Met Thr Ala Lys Asp Pro Val Val
      35   40   45

Ala Asp Leu Met Lys Asn Pro Met Ala Ser Leu Met Leu Pro Glu Ser
   50   55   60

Glu Gly Glu Phe Cys Arg Lys Asn Ile Val Asp Pro Glu Asp Pro Arg
65   70   75   80

Cys Val Gln Leu Thr Leu Thr Gly Gln Met Ile Ala Val Ser Pro Glu
            85   90   95

Glu Val Glu Phe Ala Lys Gln Ala Met Phe Ser Arg His Pro Gly Met
         100   105   110

Arg Lys Trp Pro Arg Gln Tyr Glu Trp Phe Phe Met Lys Met Arg Ile
      115   120   125

Glu His Ile Trp Leu Gln Lys Trp Tyr Gly
   130   135   138

<210> 1002
<211> 133

```
<212>Amino acid
<213> Homo sapiens




    <400> 1002
Gln Ala Ala Asn Met Ala Val Ala Arg Val Asp Ala Ala Leu Pro Pro
1               5                   10                  15
Gly Glu Gly Ser Val Val Asn Trp Ser Gly Gln Gly Leu Gln Lys Leu
            20                  25                  30
Gly Pro Asn Leu Pro Cys Glu Ala Asp Ile His Thr Leu Ile Leu Asp
        35                  40                  45
Lys Asn Gln Ile Ile Lys Leu Glu Asn Leu Glu Lys Cys Lys Arg Leu
    50                  55                  60
Ile Gln Leu Ser Val Ala Asn Asn Arg Leu Val Arg Met Met Gly Val
65                  70                  75                  80
Ala Lys Leu Thr Leu Leu Arg Val Leu Asn Leu Pro His Asn Ser Ile
            85                  90                  95
Gly Cys Val Glu Gly Leu Lys Glu Leu Val His Leu Glu Trp Leu Asn
            100                 105                 110
Leu Ala Gly Asn Asn Leu Ile Ala Met Glu Gln Ile Asn Ser Cys Thr
        115                 120                 125
Ala Leu Gln His Leu
    130         133




    <210> 1003
    <211> 276
    <212>Amino acid
    <213> Homo sapiens




    <400> 1003
Phe Arg Ala Ala Val Gly Ala Val Pro Glu Gly Ala Trp Lys Asp Thr
1               5                   10                  15
Ala Gln Leu His Lys Ser Glu Glu Ala Lys Arg Val Leu Arg Tyr Tyr
            20                  25                  30
Leu Phe Gln Gly Gln Arg Tyr Ile Trp Ile Glu Thr Gln Gln Ala Phe
        35                  40                  45
Tyr Gln Val Ser Leu Leu Asp His Gly Arg Ser Cys Asp Asp Val His
    50                  55                  60
Arg Ser Arg His Gly Leu Ser Leu Gln Asp Gln Met Glu Arg Lys Ala
65                  70                  75                  80
Ile Tyr Gly Pro Asn Val Ile Ser Ile Pro Val Lys Ser Tyr Pro Gln
            85                  90                  95
Leu Leu Val Asp Glu Ala Phe Ser Ile Ala Leu Trp Leu Ala Asp His
            100                 105                 110
Tyr Tyr Trp Tyr Ala Leu Cys Ile Phe Leu Ile Ser Ser Ile Ser Ile
        115                 120                 125
Cys Leu Ser Leu Tyr Lys Thr Arg Lys Gln Ser Gln Thr Leu Arg Asp
    130             135                 140
Met Val Lys Leu Ser Met Arg Val Cys Val Cys Arg Pro Gly Gly Glu
145                 150                 155                 160
Glu Glu Trp Val Asp Ser Ser Glu Leu Val Pro Gly Asp Cys Leu Val
            165                 170                 175
Leu Ser Gln Glu Gly Gly Leu Met Pro Cys Asp Ala Ala Leu Val Ala
        180                 185                 190
Gly Glu Cys Met Val Asn Asp Ser Ser Leu Thr Gly Glu Ser Ile Pro
        195                 200                 205
```

552

```
Val Leu Lys Thr Ala Leu Pro Glu Gly Leu Gly Pro Tyr Cys Ala Glu
    210             215             220
Thr His Arg Arg His Thr Leu Phe Cys Gly Thr Leu Ile Leu His Ala
225             230             235             240
Arg Ala Tyr Val Gly Pro His Val Leu Ala Val Val Thr Arg Thr Gly
            245             250             255
Met Ser Arg Glu Ala Gly Leu Glu Arg Asp Pro Gly Ser Ala Pro Leu
        260             265             270
Lys Arg Trp Ser
        275 276
```

```
<210> 1004
<211> 222
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1004
Phe Val Gly Gly Gly Leu His Leu His Leu Cys Leu Leu Leu Cys Phe
1               5               10              15
Met Leu Pro Glu Asp Ala Ala Met Ala Val Leu Thr Ala Ser Asn His
        20              25              30
Val Ser Asn Val Thr Val Asn Tyr Asn Ile Thr Val Glu Arg Met Asn
        35              40              45
Arg Met Gln Gly Leu Arg Val Ser Thr Val Pro Ala Val Leu Ser Pro
    50              55              60
Asn Ala Thr Leu Ala Leu Thr Ala Gly Val Leu Val Asp Ser Ala Val
65              70              75              80
Glu Val Ala Phe Leu Trp Thr Phe Gly Asp Gly Glu Gln Ala Leu His
            85              90              95
Gln Phe Gln Pro Pro Tyr Asn Glu Ser Phe Pro Val Pro Asp Pro Ser
        100             105             110
Val Ala Gln Val Leu Val Glu His Asn Val Thr His Thr Tyr Ala Ala
    115             120             125
Pro Gly Glu Tyr Val Leu Thr Val Leu Ala Ser Asn Ala Phe Glu Asn
    130             135             140
Arg Thr Gln Gln Val Leu Ile Arg Ser Gly Arg Val Pro Ile Val Ser
145             150             155             160
Leu Glu Cys Val Ser Cys Lys Ala Gln Ala Val Tyr Glu Val Ser Arg
            165             170             175
Ser Ser Tyr Val Tyr Leu Glu Gly Arg Cys Leu Asn Cys Ser Ser Gly
        180             185             190
Ser Lys Arg Gly Arg Trp Ala Ala Arg Thr Phe Ser Asn Lys Thr Leu
    195             200             205
Val Leu Asp Glu Thr Thr Thr Ser Thr Gly Ser Ala Ser Met
210             215             220 222
```

```
<210> 1005
<211> 363
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1005
Pro Glu Phe Leu Gly Arg Leu Phe Arg Gly Lys Ala Ala Thr Leu His
1               5               10              15
```

553

```
Val His Ser Asp Gln Lys Pro Leu His Asp Gly Ala Leu Gly Ser Gln
            20                  25                  30
Gln Asn Leu Val Arg Met Lys Glu Ala Leu Arg Ala Ser Thr Met Asp
        35                  40                  45
Val Thr Val Val Leu Pro Ser Gly Leu Glu Lys Arg Ser Val Leu Asn
    50                  55                  60
Gly Ser His Ala Met Met Asp Leu Leu Val Glu Leu Cys Leu Gln Asn
65                  70                  75                  80
His Leu Asn Pro Ser His His Ala Leu Glu Ile Arg Ser Ser Glu Thr
                85                  90                  95
Gln Gln Pro Leu Ser Phe Lys Pro Asn Thr Leu Ile Gly Thr Leu Asn
            100                 105                 110
Val His Thr Val Phe Leu Lys Glu Lys Val Pro Glu Glu Lys Val Lys
        115                 120                 125
Pro Gly Pro Pro Lys Val Pro Glu Lys Ser Val Arg Leu Val Val Asn
    130                 135                 140
Tyr Leu Arg Thr Gln Lys Ala Val Val Arg Val Ser Pro Glu Val Pro
145                 150                 155                 160
Leu Gln Asn Ile Leu Pro Val Ile Cys Ala Lys Cys Glu Val Ser Pro
                165                 170                 175
Glu His Val Val Leu Leu Arg Asp Asn Ile Ala Gly Glu Glu Leu Glu
            180                 185                 190
Leu Ser Lys Ser Leu Asn Glu Leu Gly Ile Lys Glu Leu Tyr Ala Trp
        195                 200                 205
Asp Asn Arg Arg Glu Thr Phe Arg Lys Ser Ser Leu Gly Asn Asp Glu
210                 215                 220
Thr Asp Lys Glu Lys Lys Lys Phe Leu Gly Phe Phe Lys Val Asn Lys
225                 230                 235                 240
Arg Ser Asn Ser Lys Gly Cys Leu Thr Thr Pro Asn Ser Pro Ser Met
                245                 250                 255
His Ser Arg Ser Leu Thr Leu Gly Pro Ser Leu Ser Leu Gly Ser Ile
            260                 265                 270
Ser Gly Val Ser Val Lys Ser Glu Met Lys Lys Arg Arg Ala Pro Pro
        275                 280                 285
Pro Pro Gly Ser Gly Pro Pro Val Gln Asp Lys Ala Ser Glu Lys Val
    290                 295                 300
Ser Leu Gly Ser Gln Ile Asp Leu Gln Lys Lys Lys Arg Arg Ala Pro
305                 310                 315                 320
Ala Pro Pro Pro Pro Gln Pro Pro Pro Ser Pro Leu Ile Pro Asn
            325                 330                 335
Arg Thr Glu Asp Lys Glu Glu Asn Arg Lys Ser Thr Met Val Tyr Cys
            340                 345                 350
Cys Ala Ser Phe Pro Thr Gln Ala Lys Arg Phe
            355                 360         363
```

```
<210> 1006
<211> 95
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(95)
<223> X = any amino acid or stop code
```

```
<400> 1006
Val Gln Trp His Asn Leu His Ser Leu Gln Pro Leu Pro Ala Gly Phe
1               5                   10                  15
Lys Xaa Phe Leu Cys Phe Ser Leu Pro Ser Ser Trp Asp Tyr Arg Cys
```

```
                    20                      25                      30
Ala Pro Pro Leu Pro Ala Pro Phe Phe Phe Tyr Phe Leu Phe Leu Val
            35                      40                      45
Glu Leu Gly Phe His His Ile Gly Xaa Ala Gly Leu Glu Leu Thr Ser
            50                      55                      60
Thr Asp Leu Pro Ala Ser Ala Ser Glu Ser Ala Gly Ile Thr Gly Met
    65                      70                      75                      80
Ser His Arg Ala Arg Pro Met Asp Phe Phe Leu Leu Lys Ile Leu
                    85                      90                      95
```

```
        <210> 1007
        <211> 151
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 1007
Gly Arg Arg Phe Arg Pro Pro Ser Asp Glu Glu Arg Glu Pro Trp Glu
  1                 5                      10                      15
Pro Trp Thr Gln Leu Arg Leu Ser Gly His Leu Lys Pro Leu His Tyr
                20                      25                      30
Asn Leu Met Leu Thr Ala Phe Met Glu Asn Phe Thr Phe Ser Gly Glu
            35                      40                      45
Val Asn Val Glu Ile Ala Cys Arg Asn Ala Thr Arg Tyr Val Val Leu
    50                      55                      60
His Ala Ser Arg Val Ala Val Glu Lys Val Gln Leu Ala Glu Asp Arg
65                      70                      75                      80
Ala Phe Gly Ala Val Pro Val Ala Gly Phe Phe Leu Tyr Pro Gln Thr
                85                      90                      95
Gln Val Leu Val Val Val Leu Asn Arg Thr Leu Asp Ala Gln Arg Asn
            100                     105                     110
Tyr Asn Leu Lys Ile Ile Tyr Asn Ala Leu Ile Glu Asn Glu Leu Leu
        115                     120                     125
Gly Phe Phe Arg Ser Ser Tyr Val Leu His Gly Glu Arg Arg Phe Leu
    130                     135                     140
Gly Val Thr Gln Phe Ser Pro
145                 150 151
```

```
        <210> 1008
        <211> 64
        <212> Amino acid
        <213> Homo sapiens
```

```
        <220>
        <221> misc_feature
        <222> (1)...(64)
        <223> X = any amino acid or stop code
```

```
        <400> 1008
Lys Glu Leu Asp Pro Phe Tyr Asn Ser Xaa Arg Lys Ile Lys Tyr Leu
  1                 5                      10                      15
Arg Ile Tyr Leu Thr Lys Glu Val Lys Asp Leu Tyr Lys Glu Asn Tyr
                20                      25                      30
Lys Thr Leu Leu Lys Glu Ile Thr Asp Asp Thr Asn Lys Lys His Ile
            35                      40                      45
```

```
Pro Ser Ser Trp Thr Gly Arg Ile Asn Thr Val Lys Met Thr Ile Leu
    50                  55                  60              64
```

<210> 1009
<211> 60
<212> Amino acid
<213> Homo sapiens

<400> 1009
```
Val Pro His Pro Leu Gln Ala Ile His Glu Gln Met Asn Cys Lys Glu
1               5               10                  15
Tyr Gln Glu Asp Leu Ala Leu Arg Ala Gln Asn Asp Ala Ala Ala Arg
            20                  25                  30
Arg Pro Ser Glu Met Phe Lys Val Arg Leu Ala Gln Gly Arg Gly Leu
        35                  40                  45
Ala Ser Leu Ser Ser Gly Ile Gln Ser Gly Val Gly
    50                  55                  60
```

<210> 1010
<211> 44
<212> Amino acid
<213> Homo sapiens

<400> 1010
```
Arg Trp Asn Ser Leu Thr Cys Val Val Leu Thr Phe Leu Gly His Arg
1               5               10                  15
Leu Leu Lys Arg Phe Leu Val Pro Lys Leu Arg Arg Phe Leu Lys Pro
            20                  25                  30
Gln Gly His Pro Arg Leu Leu Leu Trp Phe Lys Arg
        35                  40          44
```

<210> 1011
<211> 219
<212> Amino acid
<213> Homo sapiens

<400> 1011
```
Tyr Gly Glu Phe Val Thr Tyr Gln Gly Val Ala Val Thr Arg Ser Arg
1               5               10                  15
Lys Glu Gly Ile Ala His Asn Tyr Lys Asn Glu Thr Glu Trp Arg Ala
            20                  25                  30
Asn Ile Asp Thr Val Met Ala Trp Phe Thr Glu Glu Asp Leu Asp Leu
        35                  40                  45
Val Thr Leu Tyr Phe Gly Glu Pro Asp Ser Thr Gly His Arg Tyr Gly
    50                  55                  60
Pro Glu Ser Pro Glu Arg Arg Glu Met Val Arg Gln Val Asp Arg Thr
65                  70                  75                  80
```

```
Val Gly Tyr Leu Arg Glu Ser Ile Ala Arg Asn His Leu Thr Asp Arg
                85                      90                      95
Leu Asn Leu Ile Ile Thr Ser Asp His Gly Met Thr Thr Val Asp Lys
                100                     105                     110
Arg Ala Gly Asp Leu Val Glu Phe His Lys Phe Pro Asn Phe Thr Phe
                115                     120                     125
Arg Asp Ile Glu Phe Glu Leu Leu Asp Tyr Gly Pro Asn Gly Met Leu
                130                     135                     140
Leu Pro Lys Glu Gly Arg Leu Glu Lys Val Tyr Asp Ala Leu Lys Asp
145                     150                     155                     160
Ala His Pro Lys Leu His Val Tyr Lys Lys Glu Ala Phe Pro Glu Ala
                165                     170                     175
Phe His Tyr Ala Asn Asn Pro Arg Val Thr Pro Leu Leu Met Tyr Ser
                180                     185                     190
Asp Leu Gly Tyr Val Ile His Gly Val Ser Arg Leu Leu Glu Ala Pro
                195                     200                     205
Pro Pro Gly Ala Pro Ser Pro Gly Ser Gly Ser
210                     215                     219


        <210> 1012
        <211> 89
        <212>Amino acid
        <213> Homo sapiens




        <400> 1012
Arg Ile Pro Leu Leu Arg Leu Arg Ser Ser Thr Tyr Arg Ser Lys Gly
1                   5                       10                      15
Phe Asp Val Thr Val Lys His Ser His Gly Ser Trp Thr Gly Phe Gly
                20                      25                      30
Gly Glu Asp Leu Ala Thr Ile Pro Lys Gly Leu Asn Thr Tyr Phe Leu
                35                      40                      45
Val Asn Ile Ala Thr Ile Phe Glu Ser Lys Asn Phe Phe Leu Pro Gly
                50                      55                      60
Ile Lys Trp Asn Gly Ile Leu Gly Leu Ser Tyr Ala Thr Leu Ala Lys
65                  70                      75                      80
Pro Ser Ser Ser Leu Glu Thr Phe Phe
                85                  89


        <210> 1013
        <211> 82
        <212>Amino acid
        <213> Homo sapiens




        <400> 1013
Ile Lys Ser Tyr Ser Gly Pro Asn Gly Arg Ser Cys Gln Ile Trp Gln
1                   5                       10                      15
Arg Leu Arg Trp Gly Ser Arg Glu Leu Leu Leu Gly Trp Lys Leu Ser
                20                      25                      30
His Ser Phe Ser Thr Cys Pro Phe Gln Phe Pro Asp Ile Val Glu Phe
                35                      40                      45
Cys Glu Ala Met Ala Asn Ala Gly Lys Thr Val Ile Val Ala Ala Leu
                50                      55                      60
Asp Gly Thr Phe Gln Arg Lys Val Arg Arg Leu Ile Gln Val Trp Ser
65                  70                      75                      80
```

557

Trp Asp
    82

        <210> 1014
        <211> 107
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(107)
        <223> X = any amino acid or stop code

        <400> 1014
Tyr Cys Phe Cys Phe Asp Leu Leu His Xaa Cys Ile His Arg Asp Val
  1   5   10   15
Lys Pro Glu Asn Ile Leu Ile Thr Lys His Ser Val Ile Lys Leu Cys
            20   25   30
Asp Phe Gly Phe Ala Arg Leu Leu Thr Gly Pro Ser Asp Tyr Tyr Thr
        35   40   45
Asp Tyr Val Ala Thr Arg Trp Tyr Arg Ser Pro Glu Leu Pro Val Gly
    50   55   60
Asp Thr Gln Tyr Gly Pro Pro Val Asp Val Trp Ala Ile Gly Cys Val
  65   70   75   80
Ser Ala Glu Leu Leu Ser Gly Lys Cys Leu Trp Trp Pro Gly Lys Ser
            85   90   95
Asp Met Leu Asp Gln Leu Tyr Leu Ile Arg Lys
            100   105   107

        <210> 1015
        <211> 70
        <212>Amino acid
        <213> Homo sapiens

        <400> 1015
Arg Gly Trp Ala Leu Asp Trp Ile Gly Ala Asp Leu Ser Leu His Leu
  1   5   10   15
Gln Glu Glu Val Glu Thr Glu Val Ala Trp Glu Glu Cys Gly His Val
            20   25   30
Leu Leu Ser Leu Cys Tyr Ser Ser Gln Gln Gly Gly Leu Leu Val Gly
        35   40   45
Val Leu Arg Cys Ala His Leu Ala Pro Met Asp Ala Asn Gly Tyr Ser
    50   55   60
Asp Pro Phe Val Arg Leu
  65   70

        <210> 1016
        <211> 142
        <212>Amino acid
        <213> Homo sapiens

```
        <400> 1016
Gly Gly Ile Leu Ala Met Glu Tyr Ala Pro Gly Gly Thr Leu Ala Glu
 1               5                  10                  15
Phe Ile Gln Lys Arg Cys Asn Ser Leu Leu Glu Glu Glu Thr Ile Leu
              20                  25                  30
His Phe Phe Val Gln Ile Leu Leu Ala Leu His His Val His Thr His
              35                  40                  45
Leu Ile Leu His Arg Asp Leu Lys Thr Gln Asn Ile Leu Leu Asp Lys
      50                  55                  60
His Arg Met Val Val Lys Ile Gly Asp Phe Gly Ile Ser Lys Ile Leu
 65               70                  75                      80
Ser Ser Lys Ser Lys Ala Tyr Thr Val Val Gly Thr Pro Cys Tyr Ile
                  85                  90                  95
Ser Pro Glu Leu Cys Glu Gly Lys Pro Tyr Asn Gln Lys Ser Asp Ile
             100                 105                 110
Trp Ala Leu Gly Cys Val Leu Tyr Glu Leu Ala Ser Leu Lys Arg Ala
             115                 120                 125
Phe Glu Ala Ala Asn Leu Pro Ala Leu Val Leu Lys Ile Met
             130                 135                 140 142


        <210> 1017
        <211> 87
        <212> Amino acid
        <213> Homo sapiens




        <400> 1017
Val Gln Cys Gly Gly Ile His Gln Val Ser Gly Ala Val Val Val Ser
 1               5                  10                  15
Gly Leu Leu Gln Gly Met Met Gly Leu Leu Gly Ser Pro Gly His Val
              20                  25                  30
Phe Pro His Cys Gly Pro Leu Val Leu Ala Pro Ser Leu Val Val Ala
              35                  40                  45
Gly Leu Ser Ala His Arg Glu Val Ala Gln Phe Cys Phe Thr His Trp
      50                  55                  60
Gly Leu Ala Leu Leu Tyr Val Ser Pro Glu Arg Arg Gly Met Val Pro
 65               70                  75                      80
Ser Gly Gly Val Trp Gly Asp
                  85      87


        <210> 1018
        <211> 160
        <212> Amino acid
        <213> Homo sapiens




        <400> 1018
Pro Arg Met Thr Gly Ser Thr His Ala Ser Ala Pro Ser Tyr Gly Gly
 1               5                  10                  15
Ser Cys Arg Asn Asn Leu Phe Tyr Arg Glu Glu Thr Tyr Thr Pro Lys
              20                  25                  30
Ala Glu Thr Asp Glu Met Asn Glu Val Glu Thr Ala Pro Ile Pro Glu
              35                  40                  45
Glu Asn His Val Trp Leu Gln Pro Arg Val Met Arg Pro Thr Lys Pro
```

```
             50                    55                    60
Lys Lys Thr Ser Ala Val Asn Tyr Met Thr Gln Val Val Arg Cys Asp
65                    70                    75                    80
Thr Lys Met Lys Asp Arg Cys Ile Gly Ser Thr Cys Asn Arg Tyr Gln
                      85                    90                    95
Cys Pro Ala Gly Cys Leu Asn His Lys Ala Lys Ile Phe Gly Ser Leu
            100                   105                   110
Phe Tyr Glu Ser Phe Ala Ser Ile Cys Arg Ala Ala Ile His Tyr Gly
            115                   120                   125
Ile Leu Asp Asp Lys Gly Gly Leu Val Asp Ile Thr Arg Asn Gly Lys
        130                   135                   140
Val Pro Phe Phe Val Lys Ser Glu Arg His Gly Val Gln Ser Leu Arg
145                   150                   155                   160
```

```
        <210> 1019
        <211> 174
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1019
Val Pro Gln Asn Ile Ile Cys Ala Phe Phe Cys Val Pro Cys Arg Phe
1                    5                    10                   15
Ala Ser Thr Ile Pro Phe Trp Gly Leu Thr Leu His Leu Gln His Leu
                20                    25                    30
Gly Asn Asn Val Phe Leu Leu Gln Thr Leu Phe Gly Ala Val Thr Leu
            35                    40                    45
Leu Ala Asn Cys Val Ala Pro Trp Ala Leu Asn His Met Ser Arg Arg
    50                    55                    60
Leu Ser Gln Met Leu Leu Met Phe Leu Leu Ala Thr Cys Leu Leu Ala
65                    70                    75                    80
Ile Ile Phe Val Pro Gln Glu Met Gln Thr Leu Arg Val Val Leu Ala
                85                    90                    95
Thr Leu Gly Val Gly Ala Ala Ser Leu Gly Ile Thr Cys Ser Thr Ala
            100                   105                   110
Gln Glu Asn Glu Leu Ile Pro Ser Ile Ile Arg Gly Arg Ala Thr Gly
        115                   120                   125
Ile Thr Gly Asn Phe Ala Asn Ile Gly Gly Ala Leu Ala Ser Leu Val
        130                   135                   140
Met Ile Leu Ser Ile Tyr Ser Arg Pro Leu Pro Trp Ile Ile Tyr Gly
145                   150                   155                   160
Val Phe Ala Ile Leu Ser Gly Leu Val Val Leu Leu Leu Pro
                165                   170                   174
```

```
        <210> 1020
        <211> 225
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1020
Val Leu Val Ser Arg Asp His Met Lys Ser Ala Gln Gln Phe Phe Gln
1                    5                    10                   15
Leu Val Gly Gly Ser Ala Ser Glu Cys Asp Thr Ile Pro Gly Arg Gln
```

```
                    20                      25                      30
Cys Met Ala Ser Cys Phe Phe Leu Leu Lys Gln Phe Asp Asp Val Leu
         35                      40                      45
Ile Tyr Leu Asn Ser Phe Lys Ser His Phe Tyr Asn Asp Asp Ile Phe
         50                      55                      60
Asn Phe Asn Tyr Ala Gln Ala Lys Ala Ala Thr Gly Asn Thr Ser Glu
65                      70                      75                      80
Gly Glu Glu Ala Phe Leu Leu Ile Gln Ser Glu Lys Met Lys Asn Asp
                 85                      90                      95
Tyr Ile Tyr Leu Ser Trp Leu Ala Arg Gly Tyr Ile Met Asn Lys Lys
                 100                     105                     110
Pro Arg Leu Ala Trp Glu Leu Tyr Leu Lys Met Glu Thr Ser Gly Glu
         115                     120                     125
Ser Phe Ser Leu Leu Gln Leu Ile Ala Asn Asp Cys Tyr Lys Met Gly
         130                     135                     140
Gln Phe Tyr Tyr Ser Ala Lys Ala Phe Asp Val Leu Glu Arg Leu Asp
145                     150                     155                     160
Pro Asn Pro Glu Tyr Trp Glu Gly Lys Arg Gly Ala Cys Val Gly Ile
                 165                     170                     175
Phe Gln Met Ile Ile Ala Gly Arg Glu Pro Lys Glu Thr Leu Arg Glu
                 180                     185                     190
Val Leu His Leu Leu Arg Ser Thr Gly Asn Thr Gln Val Glu Tyr Met
         195                     200                     205
Ile Arg Ile Met Lys Lys Trp Ala Lys Glu Asn Arg Val Ser Ile Leu
         210                     215                     220
Lys
225
```

```
         <210> 1021
         <211> 118
         <212>Amino acid
         <213> Homo sapiens
```

```
         <400> 1021
Leu Lys Val Ser Asp Glu Leu Val Gln Gln Tyr Gln Ile Lys Asn Gln
1                 5                      10                      15
Cys Leu Ser Ala Ile Ala Ser Asp Ala Glu Gln Glu Pro Lys Ile Asp
         20                      25                      30
Pro Tyr Ala Phe Val Glu Gly Asp Glu Glu Phe Leu Phe Pro Asp Lys
         35                      40                      45
Lys Asp Arg Gln Asn Ser Glu Arg Glu Ala Gly Lys Lys His Lys Val
         50                      55                      60
Arg Glu Ile Thr Val His Gln Arg Val Thr Val Asp Phe Val Ala Leu
65                      70                      75                      80
His Ile Val Thr Leu Leu Leu Pro Gln Leu Ser His Phe Phe Cys Leu
                 85                      90                      95
Arg Ile Glu Arg Val Ile Ile Tyr Leu Glu Lys Pro Ile Phe Ala Arg
                 100                     105                     110
Leu Arg Trp Leu Met Pro
         115                     118
```

```
         <210> 1022
         <211> 178
         <212>Amino acid
         <213> Homo sapiens
```

<400> 1022
Gly Val Pro Arg Asn Leu Pro Ser Ser Leu Glu Tyr Leu Leu Leu Ser
1   5   10   15
Tyr Asn Arg Ile Val Lys Leu Ala Pro Glu Asp Leu Ala Asn Leu Thr
            20   25   30
Ala Leu Arg Val Leu Asp Val Gly Gly Asn Cys Arg Arg Cys Asp His
        35   40   45
Ala Pro Asn Pro Cys Met Glu Cys Pro Arg His Phe Pro Gln Leu His
    50   55   60
Pro Asp Thr Phe Ser His Leu Ser Arg Leu Glu Gly Leu Val Leu Lys
65   70   75   80
Asp Ser Ser Leu Ser Trp Leu Asn Ala Ser Trp Phe Arg Gly Leu Gly
                85   90   95
Asn Leu Arg Val Leu Asp Leu Ser Glu Asn Phe Leu Tyr Lys Cys Ile
            100   105   110
Thr Lys Thr Lys Ala Phe Gln Gly Leu Thr Gln Leu Arg Lys Leu Asn
        115   120   125
Leu Ser Phe Asn Tyr Gln Lys Arg Val Ser Phe Ala His Leu Val Ser
    130   135   140
Gly Pro Pro Phe Leu Arg Gly Ser Leu Gly Arg Pro Leu Lys Gly Ala
145   150   155   160
Gly Thr Trp His Gly Asn Leu Ser Phe Pro Leu His Phe Glu Trp Gly
                165   170   175
Lys Thr
178

<210> 1023
<211> 146
<212>Amino acid
<213> Homo sapiens

<400> 1023
Ile Leu Phe Ala Ala Leu Ile Trp Ser Ser Phe Asp Glu Asn Ile Glu
1   5   10   15
Ala Ser Ala Gly Gly Gly Gly Ser Ser Ile Asp Ala Val Met Val
            20   25   30
Asp Ser Gly Ala Val Val Glu Gln Tyr Lys Arg Met Gln Ser Gln Glu
        35   40   45.
Ser Ser Ala Lys Arg Ser Asp Glu Gln Arg Lys Met Lys Glu Gln Gln
    50   55   60
Ala Ala Glu Glu Leu Arg Glu Lys Gln Ala Ala Glu Gln Glu Arg Leu
65   70   75   80
Lys Gln Leu Glu Lys Glu Arg Leu Ala Ala Gln Glu Gln Lys Lys Gln
                85   90   95
Ala Glu Glu Ala Ala Lys Gln Ala Glu Leu Lys Gln Lys Gln Ala Glu
            100   105   110
Glu Ala Ala Ala Lys Ala Ala Ala Asp Ala Lys Ala Lys Ala Glu Ala
        115   120   125
Asp Ala Lys Ala Ala Glu Glu Ala Ala Lys Lys Ala Ala Ala Asp Ala
    130   135   140
Lys Lys
145 146

<210> 1024
<211> 39
<212>Amino acid

562

<213> Homo sapiens

<400> 1024
```
Ala Met Glu Ile Val His Glu Pro Arg Asp Leu Glu Arg Tyr Met Arg
1               5                   10                  15
Glu Ala Val Lys Val Ser Asn Asp Ser Pro Val Leu Leu Asp Arg Phe
            20                  25                  30
Leu Asn Asp Ala Ile Glu Cys
            35          39
```

<210> 1025
<211> 53
<212>Amino acid
<213> Homo sapiens

<400> 1025
```
Met Leu Ser Pro Gly Tyr Asp Tyr Gly Tyr Val Cys Val Glu Phe Ser
1               5                   10                  15
Leu Leu Glu Asp Ala Ile Gly Cys Met Glu Ala Asn Gln Val Ala Leu
            20                  25                  30
Tyr Phe Gly Gln Met Met Leu Glu Gly Tyr Ile Phe Leu Tyr Met Gly
            35              40                  45
Arg Glu Gly Phe Lys
    50          53
```

<210> 1026
<211> 365
<212>Amino acid
<213> Homo sapiens

<400> 1026
```
Pro Arg Val Arg Ser Ser Gly Gly Gln Glu Asp Pro Ala Ser Gln Gln
1               5                   10                  15
Trp Ala Arg Pro Arg Phe Thr Gln Pro Ser Lys Met Arg Arg Arg Val
            20                  25                  30
Ile Ala Arg Pro Val Gly Ser Ser Val Arg Leu Lys Cys Val Ala Ser
            35                  40                  45
Gly His Pro Arg Pro Asp Ile Thr Trp Met Lys Asp Asp Gln Ala Leu
    50                  55                  60
Thr Arg Pro Glu Ala Ala Glu Pro Arg Lys Lys Lys Trp Thr Leu Ser
65                  70                  75                  80
Leu Lys Asn Leu Arg Pro Glu Asp Ser Gly Lys Tyr Thr Cys Arg Val
            85                  90                  95
Ser Asn Arg Ala Gly Ala Ile Asn Ala Thr Tyr Lys Val Asp Val Ile
            100                 105                 110
Gln Arg Thr Arg Ser Lys Pro Val Leu Thr Gly Thr His Pro Val Asn
            115                 120                 125
Thr Thr Val Asp Phe Gly Gly Thr Thr Ser Phe Gln Cys Lys Val Arg
            130                 135                 140
Ser Asp Val Lys Pro Val Ile Gln Trp Leu Lys Arg Val Glu Tyr Gly
```

563

```
145                     150                     155                     160
Ala Glu Gly Arg His Asn Ser Thr Ile Asp Val Gly Gly Gln Lys Phe
            165                     170                     175
Val Val Leu Pro Thr Gly Asp Val Trp Ser Arg Pro Asp Gly Ser Tyr
            180                     185                     190
Leu Asn Lys Leu Leu Ile Thr Arg Ala Arg Gln Asp Asp Ala Gly Met
            195                     200                     205
Tyr Ile Cys Leu Gly Ala Asn Thr Met Gly Tyr Ser Phe Arg Ser Ala
    210                     215                     220
Phe Leu Thr Val Leu Pro Asp Pro Lys Pro Pro Gly Pro Pro Val Ala
225                     230                     235                     240
Ser Ser Ser Ser Ala Thr Ser Leu Pro Trp Pro Val Val Ile Gly Ile
            245                     250                     255
Pro Ala Gly Ala Val Phe Ile Leu Gly Thr Leu Leu Leu Trp Leu Cys
            260                     265                     270
Gln Ala Gln Lys Lys Pro Cys Thr Pro Ala Pro Ala Pro Pro Leu Pro
            275                     280                     285
Gly His Arg Pro Pro Gly Thr Ala Arg Asp Arg Ser Gly Asp Lys Asp
            290                     295                     300
Leu Pro Ser Leu Ala Ala Leu Ser Ala Gly Pro Gly Val Gly Leu Cys
305                     310                     315                     320
Glu Glu His Gly Ser Pro Ala Ala Pro Gln His Leu Leu Gly Pro Gly
                325                     330                     335
Pro Val Ala Gly Pro Lys Leu Tyr Pro Lys Leu Tyr Thr Asp Ile Pro
            340                     345                     350
His His Thr His Thr His Thr Pro His Pro Pro Ala Asn
            355                     360                     365
```

```
<210> 1027
<211> 30
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1027
Asn Phe His Phe Thr Gly Lys Cys Leu Phe Met Ser Gly Leu Ser Glu
1               5                   10                      15
Val Gln Leu Thr His Met Asp Asp His Thr Leu Pro Gly Tyr
        20                  25                      30
```

```
<210> 1028
<211> 104
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1028
Ser Pro Arg Lys Arg Lys Thr Arg His Ser Thr Asn Pro Pro Leu Glu
1               5                   10                      15
Cys His Val Gly Trp Val Met Asp Ser Arg Asp His Gly Pro Gly Thr
        20                  25                      30
Ser Ser Val Ser Thr Ser Asn Ala Ser Pro Ser Glu Gly Ala Pro Leu
        35                  40                      45
Ala Gly Ser Tyr Gly Cys Thr Pro His Ser Phe Pro Lys Phe Gln His
    50                  55                      60
Pro Ser His Glu Leu Leu Lys Glu Asn Gly Phe Thr Gln Gln Val Tyr
```

```
     65                      70                 75                    80
His Lys Tyr Arg Arg Arg Cys Leu Ser Glu Arg Lys Arg Leu Gly Ile
                         85                 90                    95
Gly Gln Ser Gln Glu Met Asn Thr
                100              104
```

```
     <210> 1029
     <211> 119
     <212>Amino acid
     <213> Homo sapiens
```

```
     <400> 1029
Pro Gly Ser Gly Gly Ser Ala Gly Gly Arg Asp Gly Ser Ala Tyr Gln
 1               5                   10                   15
Gly Ala Leu Leu Pro Arg Glu Gln Phe Ala Ala Pro Leu Gly Arg Pro
                20                  25                  30
Val Gly Thr Ser Tyr Ser Ala Thr Tyr Pro Ala Tyr Val Ser Pro Asp
                35                  40                  45
Val Ala Gln Ser Trp Thr Ala Gly Pro Phe Asp Gly Ser Val Leu His
     50                  55                  60
Gly Leu Pro Gly Arg Arg Pro Thr Phe Val Ser Asp Phe Leu Glu Glu
 65                  70                  75                    80
Phe Pro Gly Glu Gly Arg Glu Cys Val Asn Cys Gly Ala Leu Ser Thr
                85                  90                  95
Pro Leu Trp Arg Arg Asp Gly Thr Gly His Tyr Leu Cys Asn Ala Cys
                100                 105                 110
Gly Leu Tyr His Lys Met Asn
                115                 119
```

```
     <210> 1030
     <211> 171
     <212>Amino acid
     <213> Homo sapiens
```

```
     <220>
     <221> misc_feature
     <222> (1)...(171)
     <223> X = any amino acid or stop code
```

```
     <400> 1030
Pro Asp His Arg His Gly Ala Leu Trp Trp Trp Tyr Ser Cys Gly Val
 1               5                   10                   15
Leu Pro Val Thr Val Ser Arg Asn Glu Gly Asp Glu Arg Asn Gln Val
                20                  25                  30
Leu Thr Leu Tyr Leu Trp Ile Arg Gln Glu Trp Thr Asp Ala Tyr Leu
                35                  40                  45
Arg Trp Asp Pro Asn Ala Tyr Gly Gly Leu Asp Ala Ile Arg Ile Pro
     50                  55                  60
Ser Ser Leu Val Trp Arg Pro Asp Ile Val Leu Tyr Asn Lys Tyr Cys
 65                  70                  75                    80
Leu Ser Ala Ala Pro Pro Leu Ser Tyr Pro Ser Leu Asp Leu Pro Leu
                85                  90                  95
Ala Val Gly Val Xaa Xaa Ser Pro Leu Pro Thr Thr Xaa Pro Gly Cys
                100                 105                 110
```

```
His Ala Ala Leu Glu Ala Phe Pro Gln Asp Pro Ser Lys Leu Pro Ser
        115                 120                 125
Thr Gln Pro Leu His Gly Thr Pro Thr Leu Gly Tyr Pro Arg Pro Ala
    130                 135                 140
Gln Ala Glu Arg Leu Leu Gly Thr Tyr Cys Val Val Gln Gly Arg Cys
145                 150                 155                 160
Leu Asn His Lys Gly Leu Ser Arg Ala His Phe
                165                 170 171
```

```
<210> 1031
<211> 198
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1031
Tyr Ala Leu Thr Gly Ala Leu Val Ile Val Thr Gly Met Val Met Gly
  1           5                 10                  15
Asn Ile Ala Asp Tyr Phe Asn Leu Pro Val Ser Ser Met Ser Asn Thr
            20                  25                  30
Phe Thr Phe Leu Asn Ala Gly Ile Leu Ile Ser Ile Phe Leu Asn Ala
        35                  40                  45
Trp Leu Met Glu Ile Val Pro Leu Lys Thr Gln Leu Arg Phe Gly Phe
    50                  55                  60
Leu Leu Met Val Leu Ala Val Ala Gly Leu Met Phe Ser His Ser Leu
65                  70                  75                  80
Ala Leu Phe Ser Ala Ala Met Phe Ile Leu Gly Val Val Ser Gly Ile
            85                  90                  95
Thr Met Ser Ile Gly Thr Phe Leu Val Thr Gln Met Tyr Glu Gly Arg
            100                 105                 110
Gln Arg Gly Ser Arg Leu Leu Phe Thr Asp Ser Phe Phe Ser Met Ala
    115                 120                 125
Gly Met Ile Phe Pro Met Ile Ala Ala Phe Leu Leu Ala Arg Ser Ile
    130                 135                 140
Glu Trp Tyr Trp Val Tyr Ala Cys Ile Gly Leu Val Tyr Val Ala Ile
145                 150                 155                 160
Phe Ile Leu Thr Phe Gly Cys Glu Phe Pro Ala Leu Cys Ser His Ala
            165                 170                 175
Thr Lys Leu Gly Thr Ala Ser Ser Tyr Pro Ser Leu Asp Val Val Gln
            180                 185                 190
Leu Arg Thr Leu Asn Ala
            195         198
```

```
<210> 1032
<211> 138
<212>Amino acid
<213> Homo sapiens
```

```
<220>
<221> misc_feature
<222> (1)...(138)
<223> X = any amino acid or stop code
```

```
<400> 1032
Met Ala Lys Val Gly Leu Lys Thr Glu His Tyr Asp Arg Tyr Pro His
```

```
     1                    5                        10                        15
   Met Phe Ser Gly Gly Gln Arg Gln Arg Ile Ala Ile Ala Arg Gly Leu
             20                        25                        30
   Met Leu Asp Pro Asp Val Val Ile Ala Asp Glu Pro Val Ser Ala Leu
             35                        40                        45
   Asp Val Ser Val Arg Ala Gln Val Leu Asn Leu Met Met Asp Leu Gln
             50                        55                        60
   Gln Glu Leu Gly Leu Ser Tyr Val Phe Ile Ser His Asp Leu Ser Val
   65                        70                        75                        80
   Val Glu His Ile Ala Asp Glu Val Met Val Met Tyr Leu Gly Arg Cys
                       85                        90                        95
   Val Glu Lys Gly Thr Lys Asp Gln Ile Phe Asn Asn Pro Arg His Pro
                      100                       105                       110
   Tyr Thr Gln Ala Leu Leu Ser Ala Thr Pro Arg Leu Asn Pro Asp Asp
             115                       120                       125
   Arg Arg Glu Arg Ile Lys Leu Ser Xaa   *
   130                       135       137
```

```
        <210> 1033
        <211> 141
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1033
   Ser Ala Thr Leu Glu Arg Val Leu Asn His Pro Asp Glu Thr Gln Ala
   1                    5                        10                        15
   Arg Arg Leu Met Thr Leu Glu Asp Ile Val Ser Gly Tyr Ser Asn Val
             20                        25                        30
   Leu Ile Ser Leu Ala Asp Ser Gln Gly Lys Thr Val Tyr His Ser Pro
             35                        40                        45
   Gly Ala Pro Asp Ile Arg Glu Phe Thr Arg Asp Ala Ile Pro Asp Lys
        50                        55                        60
   Asp Ala Gln Gly Gly Glu Val Tyr Leu Leu Ser Gly Pro Thr Met Met
   65                        70                        75                        80
   Met Pro Gly His Gly His Gly His Met Glu His Ser Asn Trp Arg Met
                       85                        90                        95
   Ile Asn Leu Pro Val Gly Pro Leu Val Asp Gly Lys Pro Ile Tyr Thr
                      100                       105                       110
   Leu Tyr Ile Ala Leu Ser Ile Asp Phe His Leu His Tyr Ile Asn Asp
             115                       120                       125
   Leu Met Asn Lys Leu Ile Met Thr Ala Ser Val Ile Ile
   130                       135                   140 141
```

```
        <210> 1034
        <211> 112
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1034
   Val Leu Ala Tyr Pro Gly Ile Lys Val Ser Thr Ala Glu Ala Arg Ala
   1                    5                        10                        15
   Ile Leu Pro Ala Gln Tyr Arg Arg Gln Asp Cys Ile Ala His Gly Arg
             20                        25                        30
   His Leu Ala Gly Phe Ile His Ala Cys Tyr Ser Arg Gln Pro Glu Leu
```

```
            35                    40                    45
Ala Ala Lys Leu Met Lys Asp Val Ile Ala Glu Pro Tyr Arg Glu Arg
     50                    55                    60
Leu Leu Pro Gly Phe Arg Gln Ala Arg Gln Ala Val Ala Glu Ile Gly
 65                    70                    75                    80
Ala Val Ala Ser Gly Ile Ser Gly Ser Gly Pro Thr Leu Phe Ala Leu
                    85                    90                    95
Cys Asp Lys Pro Glu Thr Ala Gln Arg Val Ala Asp Trp Leu Gly Lys
                   100                   105                   110       112
```

```
    <210> 1035
    <211> 92
    <212> Amino acid
    <213> Homo sapiens
```

```
    <400> 1035
Gly Gln Gln Gln Arg Val Ala Leu Ala Arg Ala Leu Ile Leu Lys Pro
 1               5                    10                    15
Lys Val Leu Leu Phe Asp Glu Pro Leu Ser Asn Leu Asp Ala Asn Leu
                20                    25                    30
Arg Arg Ser Met Arg Asp Lys Ile Arg Glu Leu Gln Lys Gln Phe Asp
            35                    40                    45
Ile Thr Ser Leu Tyr Val Thr His Asp Gln Ser Glu Ala Phe Ala Val
     50                    55                    60
Ser Asp Thr Val Leu Val Met Asn Lys Gly His Ile Met Gln Ile Gly
 65                    70                    75                    80
Ser Pro Gln Asp Leu Arg Val Arg Arg Leu Asn Trp
                    85                    90    92
```

```
    <210> 1036
    <211> 51
    <212> Amino acid
    <213> Homo sapiens
```

```
    <400> 1036
Ala Val His Tyr Leu Glu Arg Val Arg Ile Ala Glu His Ala His Lys
 1               5                    10                    15
Phe Pro Gly Gln Ile Ser Gly Gly Gln Gln Gln Arg Val Ala Ile Ala
                20                    25                    30
Arg Ser Leu Cys Met Lys Pro Lys Ile Met Leu Phe Asp Glu Pro Thr
            35                    40                    45
Ser Ala Leu
     50    51
```

```
    <210> 1037
    <211> 72
    <212> Amino acid
    <213> Homo sapiens
```

<400> 1037
Ala Pro Tyr Asp Ala Glu Asn Tyr Phe Asp Tyr Asp Asn Leu Asn Asn
1   5   10   15
Gly Pro Ser Leu Gln His Trp Phe Gly Val Asp Ser Leu Gly Arg Asp
            20   25   30
Ile Phe Ser Arg Val Leu Val Gly Ala Gln Ile Ser Leu Ala Ala Gly
            35   40   45
Val Phe Ala Val Phe Ile Gly Ala Ala Ile Gly Thr Leu Leu Gly Leu
    50   55   60
Leu Ala Gly Tyr Tyr Glu Gly Trp
65   70   72

<210> 1038
<211> 188
<212>Amino acid
<213> Homo sapiens

<400> 1038
Val Phe Cys Leu Ile Ala Asp Leu Asp Pro Ile Asp Glu Leu Val Asp
1   5   10   15
Phe Pro Ile Val Tyr Ala Ser Ala Leu Asn Gly Ile Ala Gly Leu Asp
            20   25   30
His Glu Asp Met Ala Glu Asp Met Thr Pro Leu Tyr Gln Ala Ile Val
            35   40   45
Asp His Val Pro Ala Pro Asp Val Asp Leu Asp Gly Pro Phe Gln Met
    50   55   60
Gln Ile Ser Gln Leu Asp Tyr Asn Ser Tyr Val Gly Val Ile Gly Ile
65   70   75   80
Gly Arg Ile Lys Arg Gly Lys Val Lys Pro Asn Gln Gln Val Thr Ile
            85   90   95
Ile Asp Ser Glu Gly Lys Thr Arg Asn Ala Lys Val Gly Lys Val Leu
            100   105   110
Gly His Leu Gly Leu Glu Arg Ile Glu Thr Asp Leu Ala Glu Ala Gly
    115   120   125
Asp Ile Val Ala Ile Thr Gly Leu Gly Glu Leu Asn Ile Ser Asp Thr
130   135   140
Val Cys Asp Thr Gln Asn Val Glu Ala Leu Pro Ala Leu Ser Val Asp
145   150   155   160
Glu Pro Thr Val Ser Met Phe Phe Cys Val Asn Thr Ser Pro Phe Cys
            165   170   175
Gly Lys Glu Gly Lys Phe Val Thr Ser Arg Gln Ile
            180   185   188

<210> 1039
<211> 122
<212>Amino acid
<213> Homo sapiens

<400> 1039
Gln Gly Thr Arg Ala Glu Ser Gln Gly Ser Ser Lys Asp Lys Thr Arg
1   5   10   15
Leu Ala Phe Ala Gly Leu Lys Phe Gly Asp Tyr Gly Ser Ile Asp Tyr

```
                    •  20                    25                        30
   Gly Arg Asn Tyr Gly Val Ala Tyr Asp Ile Gly Ala Trp Thr Asp Val
           35                    40                        45
   Leu Pro Glu Phe Gly Gly Asp Thr Trp Thr Gln Thr Asp Val Phe Met
           50                    55                        60
   Thr Gln Arg Ala Thr Gly Val Ala Thr Tyr Arg Asn Asn Asp Phe Phe
   65                            70                    75                    80
   Gly Leu Val Asp Gly Leu Asn Phe Ala Ala Gln Tyr Gln Gly Lys Asn
                   85                    90                        95
   Asp Arg Ser Asp Phe Asp Asn Tyr Thr Glu Gly Asn Gly His Gly Phe
               100                   105                   110
 • Gly Phe Ser Ala Thr Tyr Glu Tyr Glu Gly
           115                   120       122
```

```
       <210> 1040
       <211> 65
       <212>Amino acid
       <213> Homo sapiens
```

```
       <400> 1040
   Asp Thr Tyr Ser Val Ser Ile Pro Leu Gly Ala Thr Ile Asn Met Ala
   1                   5                    10                        15
   Gly Ala Ala Ile Thr Ile Thr Val Leu Thr Leu Ala Ala Val Asn Thr
                   20                    25                        30
   Leu Gly Ile Pro Val Asp Leu Pro Thr Ala Leu Leu Leu Ser Val Val
               35                    40                        45
   Ala Ser Leu Cys Ala Cys Gly Ala Ser Gly Val Ala Gly Gly Ser Leu
           50                    55                .   60
   Leu
   65
```

```
       <210> 1041
       <211> 46
       <212>Amino acid
       <213> Homo sapiens
```

```
       <400> 1041
   Ala Asn Ala Gln Gln Gly Leu Pro Ser Gly Ile Thr Leu Lys Leu Asn
   1   .               5                    10                        15
   Asn Leu Val Asp Lys Gly Leu Val Asp Arg Leu Tyr Ala Ala Ser Ser
                   20                    25                        30
   Ser Gly Val Pro Val Asn Leu Leu Val Arg Gly Thr Cys Ser
               35                    40                    45  46
```

```
       <210> 1042
       <211> 146
       <212>Amino acid
       <213> Homo sapiens
```

<400> 1042

Ala	Arg	Met	Thr	Leu	Ile	Pro	Gly	Thr	His	Leu	Leu	Glu	Asn	Ile	His
1				5					10					15

Ala Arg Met Thr Leu Ile Pro Gly Thr His Leu Leu Glu Asn Ile His
1   5   10   15
Asn Ile Trp Val Asn Gly Val Gly Thr Asn Ser Ala Pro Phe Trp Arg
              20   25   30
Met Leu Leu Asn Ser Phe Val Met Ala Phe Ser Ile Thr Leu Gly Lys
              35   40   45
Ile Thr Val Ser Met Leu Ser Ala Phe Ala Ile Val Trp Phe Arg Phe
        50   55   60
Pro Leu Arg Asn Leu Phe Phe Trp Met Ile Phe Ile Thr Leu Met Leu
65   70   75   80
Pro Val Glu Val Arg Ile Phe Pro Thr Val Glu Val Ile Ala Asn Leu
              85   90   95
Gln Met Leu Asp Ser Tyr Ala Gly Leu Thr Leu Pro Leu Met Ala Ser
            100   105   110
Ala Thr Ala Thr Phe Leu Phe Arg Lys Leu Asn Met Ser Gly Pro Asp
            115   120   125
Lys Val Val Pro Ala Ala Arg Ile Ser Gly Tyr Gly Pro Arg Val Arg
            130   135   140
Lys Gln
145 146

<210> 1043
<211> 133
<212>Amino acid
<213> Homo sapiens

<400> 1043

Cys Ala Lys Cys Leu Arg Asp Ala Asp Glu Cys Pro Ser Gly Ala Phe
1   5   10   15
Glu Arg Ile Gly Arg Asp Ile Ser Leu Asp Ala Leu Glu Arg Glu Val
              20   25   30
Met Lys Asp Asp Ile Phe Phe Arg Thr Ser Gly Gly Gly Val Thr Leu
              35   40   45
Ser Gly Gly Glu Val Leu Met Gln Ala Glu Phe Ala Thr Arg Phe Leu
        50   55   60
Gln Arg Leu Arg Leu Trp Gly Val Ser Cys Ala Ile Glu Thr Ala Gly
65   70   75   80
Asp Ala Pro Ala Ser Lys Leu Leu Pro Leu Ala Lys Leu Cys Asp Glu
              85   90   95
Val Leu Phe Asp Leu Lys Ile Met Asp Ala Thr Gln Ala Arg Asp Val
            100   105   110
Val Lys Met Asn Leu Pro Arg Val Leu Glu Asn Leu Arg Leu Leu Val
            115   120   125
Ser Glu Gly Val Asn
130   133

<210> 1044
<211> 115
<212>Amino acid
<213> Homo sapiens

<400> 1044

Tyr Leu Leu Leu Phe Val Cys Phe Leu Val Met Ser Leu Leu Val Gly

571

```
        1                    5                  10                    15
Leu Val Tyr Lys Phe Thr Ala Glu Arg Ala Gly Lys Gln Ser Leu Asp
               20                  25                    30
Asp Leu Met Asn Ser Ser Leu Tyr Leu Met Arg Ser Glu Leu Arg Glu
               35                  40                    45
Ile Pro Pro His Asp Trp Gly Lys Thr Leu Lys Glu Met Asp Leu Asn
               50                  55                    60
Leu Ser Phe Asp Leu Arg Val Glu Pro Leu Ser Lys Tyr His Leu Asp
65                  70                    75                        80
Asp Ile Ser Met His Arg Leu Arg Gly Gly Glu Ile Val Ala Leu Asp
               85                  90                    95
Asp Gln Tyr Thr Phe Leu Gln Arg Ile Pro Arg Ser His Tyr Val Leu
              100                 105                   110
Ala Val Gly
         115
```

```
        <210> 1045
        <211> 69
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1045
Val Glu Leu Phe Leu Ser Asp Glu Gly Asp Asp Val Val Ile Glu Val
    1                5                 10                     15
Ala Asp Gln Gly Cys Gly Val Pro Glu Ser Leu Arg Asp Lys Ile Phe
               20                  25                    30
Glu Gln Gly Val Ser Thr Arg Ala Asp Glu Pro Gly Glu His Gly Ile
               35                  40                    45
Gly Leu Tyr Leu Ile Ala Ser Tyr Val Thr Arg Cys Gly Gly Val Ile
       50                  55                    60
Thr Leu Glu Asp Asn
65                  69
```

```
        <210> 1046
        <211> 69
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1046
Asp Ala Ile Ile Ala Pro Asp Ala Asn Ala Leu Pro Ala Ala Ala Gln
1                5                  10                     15
Ala Ala Glu Asn Leu Lys Asn Asp Lys Val Ala Ile Val Gly Phe Ser
               20                  25                    30
Thr Pro Asn Val Met Arg Pro Tyr Val Glu Arg Gly Thr Val Lys Glu
               35                  40                    45
Phe Gly Leu Trp Asp Val Val Gln Gln Gly Lys Ile Ser Val Tyr Val
       50                  55                    60
Ala Asp Ala Leu Gln
65                  69
```

```
        <210> 1047
        <211> 43
        <212>Amino acid
```

<213> Homo sapiens

<400> 1047
Tyr Ile Val Val Thr Gly Lys Thr His Cys Gly Thr Pro Leu Thr Thr
1   5   10   15
Val Thr Gly Asp Ala Thr Gln Ser Gly Tyr Leu Thr Leu Asn Leu Pro
            20   25   30
Glu Met Trp Glu Val Ser Gly Tyr Asn Arg Val
        35   40   43

<210> 1048
<211> 77
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(77)
<223> X = any amino acid or stop code

<400> 1048
Xaa Glu Gly Val Glu Pro Asp Ile Asn Ala Ser Lys Thr Arg Gln Gln
1   5   10   15
Leu Asn Asp Val Ala Gly Lys Met Lys Ile Ile Glu Ala Arg Leu Ser
            20   25   30
Ala Leu Thr Asn Asn Gln Thr Lys Ser Leu Lys Leu Asn Pro Val Ala
        35   40   45
Leu Pro Lys Val Ala Ser Gln Leu Leu Asp Glu Leu Gly Tyr Ser Leu
    50   55   60
Leu Ala Arg Arg Ala Asp Leu Gln Ser Ala His Xaa   *
65   70   75 76

<210> 1049
<211> 79
<212>Amino acid
<213> Homo sapiens

<400> 1049
Glu Asn Ile Ala Glu Glu Tyr Ala Thr Lys Arg Tyr Arg Ser Asn Val
1   5   10   15
Ile Asn Trp Gly Met Leu Pro Leu Gln Met Ala Glu Val Pro Thr Phe
            20   25   30
Glu Val Gly Asp Tyr Ile Tyr Ile Pro Gly Ile Lys Ala Ala Leu Asp
        35   40   45
Asn Pro Gly Thr Thr Phe Lys Gly Tyr Val Ile His Glu Asp Ala Pro
    50   55   60
Val Thr Glu Ile Thr Leu Tyr Met Glu Ser Gln Glu Ala Arg Thr
65   70   75   79

573

```
<210> 1050
<211> 99
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1050
Leu Gln Thr Glu Ile Gly Ser Met Val Tyr Ala Val Lys Pro Gly Asp
1               5                   10                  15
Gly Ser Ala Arg Glu Gln Ala Ala Ser Cys Gln Arg Val Ile Gly Gly
            20                  25                  30
Leu Ala Asn Ile Ala Glu Glu Tyr Ala Thr Lys Arg Tyr Arg Ser Asn
            35                  40                  45
Val Ile Asn Trp Gly Met Leu Pro Leu Gln Met Ala Glu Val Pro Thr
    50                  55                  60
Phe Glu Val Gly Asp Tyr Ile Tyr Ile Leu Gly Phe Lys Ala Ala Lys
65                  70                  75                  80
Tyr Ser Pro Gly Thr Ala Phe Thr Val Tyr Ala Ile Ser Gly Tyr Gly
                85                  90                  95
Pro Arg Ile
        99
```

```
<210> 1051
<211> 114
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1051
Thr Leu Glu Asp Leu Leu Met Ala Leu Asp Gly Glu Gln His Leu Gln
1               5                   10                  15
Gln Gln Val Ser Glu Lys Val Leu Ala Asp Asn Val Leu Ile Ala Pro
            20                  25                  30
Gly Ser Val Lys Pro Asp Ala Thr Phe Trp Ser Ala Leu Ile Gln Asp
            35                  40                  45
Arg Tyr Asn Val Met Thr Cys Ile Glu Lys Asp Ala Cys Val Leu Val
    50                  55                  60
Glu Gln Asp Leu Asn Ser Asp Gly Gln Ala Glu Arg Ile Leu Phe Ala
65                  70                  75                  80
Phe Asn Asp Asp Arg Val Ile Val Tyr Gly Phe Asp Ser Asp Arg Lys
                85                  90                  95
Glu Trp Asp Ala Leu Asp Met Ser Leu Leu Pro Asn Glu Ile Thr Lys
            100                 105                 110
Glu Lys
114
```

```
<210> 1052
<211> 210
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1052
```

```
Glu Ser Asn Ser Arg Cys Arg Lys Met Pro Gly Glu Arg Cys Arg Gly
1               5                   10                  15
Gly Pro Ala Arg Leu Ser Leu Leu Leu Asp Leu Pro Thr Arg Pro Leu
            20                  25                  30
Pro His Pro Arg Gln Val Ile Asp Phe Gly Ser Ala Ser Ile Phe Ser
            35                  40                  45
Glu Val Arg Tyr Val Lys Glu Pro Tyr Ile Gln Ser Arg Phe Tyr Arg
    50                  55                  60
Ala Pro Glu Ile Leu Leu Gly Leu Pro Phe Cys Glu Lys Val Asp Val
65                  70                  75                  80
Trp Ser Leu Gly Cys Val Met Asp Glu Leu His Leu Gly Trp Pro Leu
            85                  90                  95
Tyr Pro Gly Asn Asn Glu Tyr Asp Gln Val Arg Tyr Ile Cys Glu Thr
            100                 105                 110
Gln Gly Leu Pro Lys Pro His Leu Leu His Ala Ala Cys Lys Ala His
    115                 120                 125
His Phe Phe Lys Arg Asn Pro His Pro Asp Ala Ala Asn Pro Trp Gln
    130                 135                 140
Leu Lys Ser Ser Ala Asp Tyr Leu Ala Glu Thr Lys Val Arg Pro Leu
145                 150                 155                 160
Glu Arg Arg Lys Tyr Met Leu Lys Ser Leu Asp Gln Ile Glu Thr Val
            165                 170                 175
Asn Gly Gly Ser Val Ala Ser Arg Leu Thr Phe Pro Asp Arg Glu Ala
            180                 185                 190
Leu Ala Glu His Ala Asp Leu Lys Ser Met Val Glu Leu Met Lys Arg
    195                 200                 205
Leu Leu
    210
```

```
    <210> 1053
    <211> 100
    <212>Amino acid
    <213> Homo sapiens
```

```
    <400> 1053
Arg Leu Val Lys Lys Arg Val Glu Cys Arg Gln Cys Gly Lys Ala Gly
1               5                   10                  15
Arg Asn Gln Ser Thr Leu Lys Thr His Met Arg Ser His Thr Gly Glu
            20                  25                  30
Lys Pro Tyr Glu Cys Asp His Cys Gly Lys Ala Phe Ser Ile Gly Ser
            35                  40                  45
Asn Leu Asn Val His Arg Arg Ile His Thr Gly Glu Lys Pro Tyr Glu
    50                  55                  60
Cys Leu Val Cys Gly Glu Ala Phe Ser Asp His Ser Ser Leu Arg Ser
65                  70                  75                  80
His Val Lys Thr His Arg Gly Glu Lys Leu Phe Val Ser Ser Val Trp
            85                  90                  95
Lys Arg Leu Gln
            100
```

```
    <210> 1054
,   <211> 194
    <212>Amino acid
    <213> Homo sapiens
```

```
        <400> 1054
Cys Gly Pro Gly Phe Ser Leu Ser Phe Phe Phe Leu Arg Trp Ser Phe
 1               5                  10                  15
Ala Leu Val Ala Gln Ala Gly Val Gln Trp His Asp Leu Gly Ser Leu
            20                  25                  30
Gln Pro Pro Ala Pro Gly Phe Lys Arg Phe Ser Ser Leu Ser Leu Leu
        35                  40                  45
Ser Arg Trp Asp Tyr Arg His Ala His Ala Arg Leu Ile Phe Val Phe
    50                  55                  60
Leu Val Glu Met Gly Phe Leu His Val Gly Gln Ala Gly Leu Glu Leu
65                  70                  75                  80
Pro Thr Ser Gly Asp Pro Pro Thr Ser Ala Ser Gln Ser Ala Arg Ile
                85                  90                  95
Thr Gly Val Thr Thr Pro Leu Gly Thr Phe Phe Phe Phe Leu Arg Trp
            100                 105                 110
Ser Phe Ala Leu Val Ala Gln Ala Gly Gly Gln Cys Leu Asp Leu Gly
    115                 120                 125
Ser Leu Gln Leu Pro Pro Pro Gly Phe Lys Arg Leu Val Cys His Phe
    130                 135                 140
Gln Thr Pro Gln Lys His Arg Cys Ser Cys Gln Ala Pro Gly Asp Cys
145                 150                 155                 160
Leu Gln Glu Ser Phe Val Met Thr Gly Cys Val Leu Arg Thr Val Ser
                165                 170                 175
Glu Ser Val Gln Arg Ala Asn Ala Gly Ala Gly Ala Glu Thr Val Gln
            180                 185                 190
Gly Leu
194


        <210> 1055
        <211> 351
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(351)
        <223> X = any amino acid or stop code




        <400> 1055
Met Gly Asn Ala Ala Ala Ala Lys Lys Gly Ser Glu Gln Glu Ser Val
 1               5                  10                  15
Lys Glu Phe Leu Ala Lys Ala Lys Glu Asp Phe Leu Lys Lys Trp Glu
            20                  25                  30
Ser Pro Ala Gln Asn Thr Ala His Leu Asp Gln Phe Glu Arg Ile Lys
        35                  40                  45
Thr Leu Gly Thr Gly Ser Phe Gly Arg Val Met Leu Val Lys His Lys
    50                  55                  60
Glu Thr Gly Asn His Tyr Ala Met Lys Ile Leu Asp Xaa Gln Lys Val
65                  70                  75                  80
Gly Lys Leu Lys Gln Ile Glu His Thr Leu Asn Glu Lys Arg Ile Leu
                85                  90                  95
Gln Ala Val Asn Phe Pro Phe Leu Val Lys Leu Glu Phe Ser Phe Lys
            100                 105                 110
Asp Asn Ser Asn Leu Tyr Met Val Met Glu Tyr Val Pro Gly Gly Glu
            115                 120                 125
Met Phe Ser His Leu Arg Arg Ile Gly Arg Phe Ser Glu Pro His Ala
        130                 135                 140
Arg Phe Tyr Ala Ala Gln Ile Val Leu Thr Phe Glu Tyr Leu His Ser
```

```
145                      150                      155                      160
Leu Asp Leu Ile Tyr Arg Asp Leu Lys Pro Glu Asn Leu Leu Ile Asp
                165                      170                      175
Gln Gln Gly Tyr Ile Gln Val Thr Asp Phe Gly Phe Ala Lys Arg Val
                180                      185                      190
Lys Gly Arg Thr Trp Thr Leu Cys Gly Thr Pro Glu Tyr Leu Ala Pro
                195                      200                      205
Glu Ile Ile Leu Ser Lys Gly Tyr Asn Lys Ala Val Asp Trp Trp Ala
        210                      215                      220
Leu Gly Val Leu Ile Tyr Glu Met Ala Ala Gly Tyr Pro Pro Phe Phe
225                      230                      235                      240
Ala Asp Gln Pro Ile Gln Ile Tyr Glu Lys Ile Val Ser Gly Lys Val
                245                      250                      255
Arg Phe Pro Ser His Phe Ser Ser Asp Leu Lys Asp Leu Leu Arg Asn
        260                      265                      270
Leu Leu Gln Val Asp Leu Thr Lys Arg Phe Gly Asn Leu Lys Asn Gly
        275                      280                      285
Val Asn Asp Ile Lys Asn His Lys Trp Phe Ala Thr Thr Asp Trp Ile
        290                      295                      300
Ala Ile Tyr Gln Arg Lys Val Glu Ala Pro Phe Ile Pro Lys Phe Lys
305                      310                      315                      320
Gly Pro Gly Asp Thr Ser Asn Phe Asp Asp Tyr Glu Glu Glu Glu Ile
                325                      330                      335
Arg Val Ser Ile Asn Glu Lys Phe Gly Lys Glu Phe Ser Glu Phe
        340                      345                      350 351


        <210> 1056
        <211> 136
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(136)
        <223> X = any amino acid or stop code




        <400> 1056
Ser Ser Ser Arg Ser Ser His Gly Asp Ser Pro Pro His Ser Gln Thr
1               5                       10                      15
Pro Cys Asp Thr Asn Arg Gly Leu Asp Thr Lys His Xaa Asp Ser Gln
                20                      25                      30
Ser Ile Glu Glu Lys Asp Ser Ser Gln Ser Glu Xaa Asn Arg Ile Glu
        35                      40                      45
Arg Arg Lys Glu Val Glu Arg Ile Leu Gln Thr Asn Ser Asp Tyr Met
        50                      55                      60
Xaa His Trp Ser Asn Xaa Pro Glu Asn Ile Leu Pro Lys Lys Phe Phe
65                      70                      75                      80
Ser Lys His Gln Lys Cys Thr Ala Thr Leu Ser Met Arg Asn Thr Ser
                85                      90                      95
Ile Met Lys Lys Glu Gly Leu Phe Xaa Ala Gln Phe Pro Ser Leu Leu
        100                     105                     110
Leu Ser His Leu Pro Ala Val Gly Leu Gly Ile Tyr Thr Gly Thr His
        115                     120                     125
Leu Thr Thr Ser Thr Ser Thr Phe
130                     135 136


        <210> 1057
        <211> 79
```

```
     <212>Amino acid
     <213> Homo sapiens

     <220>
     <221> misc_feature
     <222> (1)...(79)
     <223> X = any amino acid or stop code


     <400> 1057
Thr Phe His Ser Ser Leu Glu Lys Asn Ile Leu Gln Pro Cys Arg Xaa
 1               5                  10                  15
Arg Arg Ala Ile Cys Leu Pro Leu Leu Leu Xaa Pro Ser Val Pro Leu
             20                  25                  30
Leu Ala Pro Gln Tyr Phe Ser Asp Leu Arg Asn Ser Ile Val Asn Ser
             35                  40                  45
Gln Pro Pro Glu Lys Gln Gln Ala Met His Leu Cys Phe Glu Asn Leu
     50                  55        .           60
Met Glu Gly Ile Glu Arg Asn Leu Leu Thr Lys Asn Arg Asp Arg
 65              .       70                  75              79


     <210> 1058
     <211> 458
     <212>Amino acid
     <213> Homo sapiens

     <220>
     <221> misc_feature
     <222> (1)...(458)
     <223> X = any amino acid or stop code


     <400> 1058
Gly Thr Ser Gly Val Gln Gln Glu Ile Ser Arg Leu Thr Asn Glu Asn
 1               5                  10                  15
Leu Asp Leu Lys Glu Leu Val Glu Lys Leu Glu Lys Asn Glu Arg Lys
             20                  25                  30
Leu Lys Lys Gln Leu Lys Ile Tyr Met Lys Lys Ala Gln Asp Leu Glu
             35                  40                  45
Ala Ala Gln Ala Leu Ala Gln Ser Glu Arg Lys Arg His Glu Leu Asn
     50                  55                  60
Arg Gln Val Thr Val Gln Arg Lys Glu Lys Asp Phe Gln Gly Met Leu
 65                  70                  75                  80
Glu Tyr His Lys Glu Asp Glu Ala Leu Leu Ile Arg Asn Leu Val Thr
             85                  90                  95
Asp Leu Lys Pro Gln Met Leu Ser Gly Thr Val Pro Cys Leu Pro Ala
             100                 105                 110
Tyr Ile Leu Tyr Met Cys Ile Arg His Ala Asp Tyr Thr Asn Asp Asp
     115                 120                 125
Leu Lys Val His Ser Leu Leu Thr Ser Thr Ile Asn Gly Ile Lys Lys
     130                 135                 140
Val Leu Lys Lys His Asn Asp Asp Phe Glu Met Thr Ser Phe Trp Leu
145                 150         .       155                 160
Ser Asn Thr Cys Arg Leu Leu His Cys Leu Lys Gln Tyr Ser Gly Asp
             165                 170                 175
Glu Gly Phe Met Thr Gln Asn Thr Ala Lys Gln Asn Glu His Cys Leu
             180                 185                 190
```

```
Lys Asn Phe Asp Leu Thr Glu Tyr Arg Gln Val Leu Ser Asp Leu Ser
        195                 200                 205
Ile Gln Ile Tyr Gln Gln Leu Ile Lys Ile Ala Glu Gly Val Leu Gln
    210                 215                 220
Pro Met Ile Val Ser Ala Met Leu Glu Asn Xaa Ser Ile Gln Gly Leu
225                 230                 235                 240
Ser Gly Val Lys Pro Thr Gly Ser Gln Lys His Ser Ser Ser Met Ala
                245                 250                 255
Asp Glu Asp Asn Ser Tyr Arg Leu Glu Ala Ile Ile Arg Gln Met Asn
            260                 265                 270
Ala Phe His Thr Val Met Cys Asp Gln Gly Leu Asp Pro Glu Ile Ile
        275                 280                 285
Leu Gln Val Phe Lys Gln Leu Phe Tyr Met Ile Asn Ala Val Thr Leu
    290                 295                 300
Asn Asp Leu Leu Leu Arg Lys Asp Val Cys Ser Trp Ser Thr Gly Met
305                 310                 315                 320
Gln Leu Arg Tyr Asn Ile Ser Gln Leu Glu Glu Trp Leu Arg Gly Arg
                325                 330                 335
Asn Leu His Gln Ser Gly Ala Val Gln Thr Met Glu Pro Leu Ile Gln
            340                 345                 350
Ala Ala Gln Leu Leu Gln Leu Lys Lys Lys Thr Gln Glu Asp Ala Glu
        355                 360                 365
Ala Ile Cys Ser Leu Cys Thr Ser Leu Ser Thr Gln Gln Ile Val Lys
    370                 375                 380
Ile Leu Asn Leu Tyr Thr Pro Leu Asn Glu Phe Glu Glu Arg Val Thr
385                 390                 395                 400
Val Ala Phe Ile Arg Thr Ile Gln Ala Gln Leu Gln Glu Arg Asn Asp
                405                 410                 415
Pro Gln Gln Leu Leu Leu Asp Ala Lys His Met Phe Pro Val Leu Phe
            420                 425                 430
Pro Phe Asn Pro Ser Ser Leu Thr Met Asp Ser Ile His Ile Pro Ala
        435                 440                 445
Cys Leu Asn Leu Glu Phe Leu Asn Glu Val
450                 455         458
```

```
<210> 1059
<211> 82
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(82)
<223> X = any amino acid or stop code
```

```
    <400> 1059
His Glu Glu Asn Thr Ile Leu Lys Ala Ala Glu Val Gln Val Pro Pro
1               5               10                  15
Lys Xaa Val Val Thr Pro Glu Ala Lys Ala Phe Ile Xaa Arg Cys Leu
        20                  25                  30
Ala Tyr Gln Lys Glu Asp Cys Ile Asp Ala Gln Gln Leu Ala Cys Asp
        35                  40                  45
Pro Tyr Leu Leu His Tyr Ile Gln Lys Leu Val Phe Val Ser Ser Pro
    50                  55                  60
Ala Gly Ala Ala Ile Ala Ser Thr Phe Gly Val Ser Asn Ser Cys Ser
65                  70                  75                  80
Ser Asn
    82
```

```
<210> 1060
<211> 277
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1060
Gly Thr Thr Asp Glu Ile Met Thr Arg Trp Ala Arg Val Ser Thr Thr
 1           5                  10                  15
Tyr Asn Lys Arg Pro Leu Pro Ala Thr Ser Trp Glu Asp Met Lys Lys
            20                  25                  30
Gly Ser Phe Glu Gly Thr Ser Gln Asn Leu Pro Lys Arg Lys Gln Leu
        35                  40                  45
Glu Ala Asn Arg Leu Ser Leu Lys Asn Asp Ala Pro Gln Ala Lys His
    50                  55                  60
Lys Lys Asn Lys Lys Lys Lys Glu Tyr Leu Asn Glu Asp Val Asn Gly
65                  70                  75                  80
Phe Met Glu Tyr Leu Arg Gln Asn Ser Gln Met Val His Asn Gly Gln
            85                  90                  95
Ile Ile Ala Thr Asp Ser Glu Glu Val Arg Glu Glu Ile Ala Val Ala
            100                 105                 110
Leu Lys Lys Asp Ser Arg Arg Glu Gly Arg Arg Leu Lys Arg Gln Ala
        115                 120                 125
Ala Lys Lys Asn Ala Met Val Cys Phe His Cys Arg Lys Pro Gly His
    130                 135                 140
Gly Ile Ala Asp Cys Pro Ala Ala Leu Glu Asn Gln Asp Met Gly Thr
145                 150                 155                 160
Gly Ile Cys Tyr Arg Cys Gly Ser Thr Glu His Glu Ile Thr Lys Cys
                165                 170                 175
Lys Ala Lys Val Asp Pro Ala Leu Gly Glu Phe Pro Phe Ala Lys Cys
            180                 185                 190
Phe Val Cys Gly Glu Met Gly His Leu Ser Arg Ser Cys Pro Asp Asn
        195                 200                 205
Pro Lys Gly Leu Tyr Ala Asp Gly Gly Gly Cys Lys Leu Cys Gly Ser
    210                 215                 220
Val Glu His Leu Lys Lys Asp Cys Pro Glu Ser Gln Asn Ser Glu Arg
225                 230                 235                 240
Met Val Thr Val Gly Arg Trp Ala Lys Gly Met Ser Ala Asp Tyr Glu
                245                 250                 255
Glu Ile Leu Asp Val Pro Lys Pro Gln Lys Pro Lys Thr Lys Ile Pro
            260                 265                 270
Lys Val Val Asn Phe
        275     277
```

```
<210> 1061
<211> 95
<212> Amino acid
<213> Homo sapiens
```

```
<220>
<221> misc_feature
<222> (1)...(95)
<223> X = any amino acid or stop code
```

```
<400> 1061
```

```
Asp His Val Arg Lys Ser Leu Leu Lys Asn Arg Ala Glu Asn Ile Val
1               5                   10                  15
Asn Ile Phe Lys Cys Asn Val Val Ser Leu Pro Asn Leu Pro Ala Phe
            20                  25                  30
Gly Gln Ala Gln Trp Leu Thr Pro Val Ile Pro Ala Leu Trp Glu Ala
        35                  40                  45
Glu Val Gly Gly Ser Xaa Gly Gln Glu Ile Glu Thr Ile Leu Ala Asn
    50                  55                  60
Ala Val Lys Ser Pro Phe Leu Leu Lys Ile Gln Lys Lys Lys Ile Ser
65                  70                  75                  80
Arg Ala Trp Trp Arg Ala Pro Val Ser Pro Arg Tyr Ser Gly Gly
                85                  90                  95
```

<210> 1062
<211> 259
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(259)
<223> X = any amino acid or stop code

<400> 1062
```
Ser Asp Ala Trp Ala Asp Ala Trp Ala Arg Ser Leu Ser Val Ser Pro
1               5                   10                  15
Ser Ser Tyr Pro Glu Leu His Thr Glu Val Pro Leu Ser Val Leu Ile
            20                  25                  30
Leu Gly Leu Leu Val Val Phe Ile Leu Ser Val Cys Phe Gly Ala Gly
        35                  40                  45
Leu Phe Val Phe Val Leu Lys Arg Arg Lys Gly Val Pro Ser Val Pro
    50                  55                  60
Arg Asn Thr Asn Asn Leu Asp Val Ser Ser Phe Gln Leu Gln Tyr Gly
65                  70                  75                  80
Ser Tyr Asn Thr Glu Thr His Asp Lys Thr Asp Gly His Val Tyr Asn
                85                  90                  95
Tyr Ile Pro Pro Pro Val Val Gln Met Cys Gln Asn Pro Ile Tyr Met
            100                 105                 110
Ala Gly Arg Glu Gly Arg Pro Ser Ser Leu Leu Pro Lys Pro Gly Lys
        115                 120                 125
Glu Phe Gln Leu Leu Gly Asn Leu Glu Glu Lys Lys Glu Glu Pro Ala
    130                 135                 140
Thr Pro Ala Tyr Thr Ile Ser Ala Thr Glu Leu Leu Glu Lys Gln Ala
145                 150                 155                 160
Thr Pro Arg Glu Pro Glu Leu Leu Tyr Gln Asn Ile Ala Glu Pro Ser
                165                 170                 175
Gln Gly Thr Ser Thr Ala Gln Ala Xaa Ser Thr Ile Thr Phe Val Pro
            180                 185                 190
Tyr Leu Lys Gly Gln Phe Ala Pro Ser Tyr Glu Ser Arg Arg Gln Asn
        195                 200                 205
Gln Asp Arg Ile Asn Lys Thr Val Leu Tyr Gly Thr Pro Arg Lys Cys
    210                 215                 220
Phe Val Gly Gln Ser Lys Pro Asn His Pro Leu Leu Gln Ala Lys Pro
225                 230                 235                 240
Gln Ser Glu Pro Asp Tyr Leu Glu Val Leu Glu Lys Gln Thr Ala Ile
                245                 250                 255
Ser Gln Leu
        259
```

```
<210> 1063
<211> 498
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1063
Ala Leu Cys His Ile Ala Val Gly Gln Gln Met Asn Leu His Trp Leu
1               5                   10                  15
His Lys Ile Gly Leu Val Val Ile Leu Ala Ser Thr Val Val Ala Met
            20                  25                  30
Ser Ala Val Ala Gln Leu Trp Glu Asp Glu Trp Glu Val Leu Leu Ile
        35                  40                  45
Ser Leu Gln Gly Thr Ala Pro Phe Leu His Val Gly Ala Val Ala Ala
    50                  55                  60
Val Thr Met Leu Ser Trp Ile Val Ala Gly Gln Phe Ala Arg Ala Glu
65                  70                  75                  80
Arg Thr Ser Ser Gln Val Thr Ile Leu Cys Thr Phe Phe Thr Val Val
            85                  90                  95
Phe Ala Leu Tyr Leu Ala Pro Leu Thr Ile Ser Ser Pro Cys Ile Met
            100                 105                 110
Glu Lys Lys Asp Leu Gly Pro Lys Pro Ala Leu Ile Gly His Arg Gly
        115                 120                 125
Ala Pro Met Leu Ala Pro Glu His Thr Leu Met Ser Phe Arg Lys Ala
    130                 135                 140
Leu Glu Gln Lys Leu Tyr Gly Leu Gln Ala Asp Ile Thr Ile Ser Leu
145                 150                 155                 160
Asp Gly Val Pro Phe Leu Met His Asp Thr Thr Leu Arg Arg Thr Thr
                165                 170                 175
Asn Val Glu Glu Glu Phe Pro Glu Leu Ala Arg Arg Pro Ala Ser Met
            180                 185                 190
Leu Asn Trp Thr Thr Leu Gln Arg Leu Asn Ala Gly Gln Trp Phe Leu
            195                 200                 205
Lys Thr Asp Pro Phe Trp Thr Ala Ser Ser Leu Ser Pro Ser Asp His
    210                 215                 220
Arg Glu Ala Gln Asn Gln Ser Ile Cys Ser Leu Ala Glu Leu Leu Glu
225                 230                 235                 240
Leu Ala Lys Gly Asn Ala Thr Leu Leu Leu Asn Leu Arg Asp Pro Pro
                245                 250                 255
Arg Glu His Pro Tyr Arg Ser Ser Phe Ile Asn Val Thr Leu Glu Ala
            260                 265                 270
Val Leu His Ser Gly Phe Pro Gln His Gln Val Met Trp Leu Pro Ser
    275                 280                 285
Arg Gln Arg Pro Leu Val Arg Lys Val Ala Pro Gly Phe Gln Gln Thr
    290                 295                 300
Ser Gly Ser Lys Glu Ala Val Ala Ser Leu Arg Arg Gly His Ile Gln
305                 310                 315                 320
Arg Leu Asn Leu Arg Tyr Thr Gln Val Ser Arg Gln Glu Leu Arg Asp
            325                 330                 335
Tyr Ala Ser Trp Asn Leu Ser Val Asn Leu Tyr Thr Val Asn Ala Pro
        340                 345                 350
Trp Leu Phe Ser Leu Leu Trp Cys Ala Gly Val Pro Ser Val Thr Ser
        355                 360                 365
Asp Asn Ser His Thr Leu Ser Gln Val Pro Ser Pro Leu Trp Ile Met
    370                 375                 380
Pro Pro Asp Glu Tyr Cys Leu Met Trp Val Thr Ala Asp Leu Val Ser
385                 390                 395                 400
Phe Thr Leu Ile Val Gly Ile Phe Val Leu Gln Lys Trp Arg Leu Gly
                405                 410                 415
Gly Ile Arg Ser Tyr Asn Pro Glu Gln Ile Met Leu Ser Ala Ala Val
```

```
                 420                      425                     430
Arg Arg Thr Ser Arg Asp Val Ser Ile Met Lys Glu Lys Leu Ile Phe
        435                      440                     445
Ser Glu Ile Ser Asp Gly Val Glu Val Ser Asp Val Leu Ser Val Cys
    450                      455                     460
Ser Asp Asn Ser Tyr Asp Thr Tyr Ala Asn Ser Thr Ala Thr Pro Val
465                      470                     475                 480
Gly Pro Arg Gly Gly Gly Ser His Thr Lys Thr Leu Ile Glu Arg Ser
                     485                     490                 495
Gly Arg
498
```

```
         <210> 1064
         <211> 374
         <212>Amino acid
         <213> Homo sapiens
```

```
         <400> 1064
Asn Ser Ala Asp Tyr Gly Asp Gly Pro Asp Ser Ser Asp Ala Asp Pro
1                 5                    10                     15
Asp Ser Gly Thr Glu Glu Gly Val Leu Asp Phe Ser Asp Pro Phe Ser
             20                   25                     30
Thr Glu Val Lys Pro Arg Ile Leu Leu Met Gly Leu Arg Arg Ser Gly
         35                   40                   45
Lys Ser Ser Ile Gln Lys Val Val Phe His Lys Met Ser Pro Asn Glu
    50                   55                   60
Thr Leu Phe Leu Glu Ser Thr Asn Lys Ile Cys Arg Glu Asp Val Ser
65                   70                   75                   80
Asn Ser Ser Phe Val Asn Phe Gln Ile Trp Asp Phe Pro Gly Gln Ile
                 85                   90                   95
Asp Phe Phe Asp Pro Thr Phe Asp Tyr Glu Met Ile Phe Arg Gly Thr
             100                  105                  110
Gly Ala Leu Ile Phe Val Ile Asp Ser Gln Asp Asp Tyr Met Glu Ala
         115                  120                  125
Leu Ala Arg Leu His Leu Thr Val Thr Arg Ala Tyr Lys Val Asn Thr
    130                  135                  140
Asp Ile Asn Phe Glu Val Phe Ile His Lys Val Asp Gly Leu Ser Asp
145                  150                  155                  160
Asp His Lys Ile Glu Thr Gln Arg Asp Ile His Gln Arg Ala Asn Asp
                 165                  170                  175
Asp Leu Ala Asp Ala Gly Leu Glu Lys Ile His Leu Ser Phe Tyr Leu
             180                  185                  190
Thr Ser Ile Tyr Asp His Ser Ile Phe Glu Ala Phe Ser Lys Val Val
         195                  200                  205
Gln Lys Leu Ile Pro Gln Leu Pro Thr Leu Glu Asn Leu Leu Asn Ile
    210                  215                  220
Phe Ile Ser Asn Ser Gly Ile Glu Lys Ala Phe Leu Phe Asp Val Val
225                  230                  235                  240
Ser Lys Ile Tyr Ile Ala Thr Asp Ser Thr Pro Val Asp Met Gln Thr
             245                  250                  255
Tyr Glu Leu Cys Cys Asp Met Ile Asp Val Val Ile Asp Ile Ser Cys
         260                  265                  270
Ile Tyr Gly Leu Lys Glu Asp Gly Ala Gly Thr Pro Tyr Asp Lys Glu
         275                  280                  285
Ser Thr Ala Ile Ile Lys Leu Asn Asn Thr Thr Val Leu Tyr Leu Lys
    290                  295                  300
Glu Val Thr Lys Phe Leu Ala Leu Val Cys Phe Val Arg Glu Glu Ser
305                  310                  315                  320
Phe Glu Arg Lys Gly Leu Ile Asp Tyr Asn Phe His Cys Phe Arg Lys
```

583

```
                         325                    330                    335
Ala Ile His Glu Val Phe Glu Val Arg Met Lys Val Val Lys Ser Arg
                340                    345                    350
Lys Val Gln Asn Arg Leu Gln Lys Lys Lys Arg Ala Thr Pro Asn Gly
                355                    360                    365
Thr Pro Arg Val Leu Leu
        370             374
```

```
<210> 1065
<211> 278
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1065
Arg Thr Arg Gly Arg Asp Pro Gly Ala Gly Phe Arg Arg Thr Ala Asn
 1               5                    10                    15
Lys Arg Cys Cys Arg Arg Arg Phe Leu Ile Gly Cys Gly Trp Leu Pro
                20                    25                    30
Leu Arg Ser Asp Trp Pro Leu Val Ser Lys Met Leu Ser Lys Gly Leu
        35                    40                    45
Lys Arg Lys Arg Glu Glu Glu Glu Glu Lys Glu Pro Leu Ala Val Asp
    50                    55                    60
Ser Trp Trp Leu Asp Pro Gly His Ala Ala Val Ala Gln Ala Pro Pro
65                    70                    75                    80
Ala Val Ala Ser Ser Ser Leu Phe Asp Leu Ser Val Leu Lys Leu His
                85                    90                    95
His Ser Leu Gln Gln Ser Glu Pro Asp Leu Arg His Leu Val Leu Val
            100                   105                   110
Val Asn Thr Leu Arg Arg Ile Gln Ala Ser Met Ala Pro Ala Ala Ala
            115                   120                   125
Leu Pro Pro Val Pro Ser Pro Pro Ala Ala Pro Ser Val Ala Asp Asn
    130                   135                   140
Leu Leu Ala Ser Ser Asp Ala Ala Leu Ser Ala Ser Met Ala Ser Leu
145                   150                   155                   160
Leu Glu Asp Leu Ser His Ile Glu Gly Leu Ser Gln Ala Pro Gln Pro
                165                   170                   175
Leu Ala Asp Glu Gly Pro Pro Gly Arg Ser Ile Gly Gly Ala Ala Pro
            180                   185                   190
Ser Leu Gly Ala Leu Asp Leu Leu Gly Pro Ala Thr Gly Cys Leu Leu
            195                   200                   205
Asp Asp Gly Leu Glu Gly Leu Phe Glu Asp Ile Asp Thr Ser Met Tyr
    210                   215                   220
Asp Asn Glu Leu Trp Ala Pro Ala Ser Glu Gly Leu Lys Pro Gly Pro
225                   230                   235                   240
Glu Asp Gly Pro Gly Lys Glu Glu Ala Pro Glu Leu Asp Glu Ala Glu
                245                   250                   255
Leu Asp Tyr Leu Met Asp Val Leu Val Gly Thr Gln Ala Leu Glu Arg
            260                   265                   270
Pro Pro Gly Pro Gly Arg
        275             278
```

```
<210> 1066
<211> 502
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
```

```
<222> (1)...(502)
<223> X = any amino acid or stop code
```

```
<400> 1066
Leu Gln Glu Val Lys Ala Arg Arg Asn Thr Leu His Lys Glu Lys Asp
 1               5                   10                  15
His Leu Val Asn Asp Tyr Glu Gln Asn Met Lys Leu Leu Gln Thr Lys
            20                  25                  30
Tyr Asp Ala Asp Ile Asn Leu Leu Lys Gln Glu His Ala Leu Ser Ala
        35                  40                  45
Ser Lys Ala Ser Ser Met Ile Glu Glu Leu Glu Gln Asn Val Cys Gln
    50                  55                  60
Leu Lys Gln Gln Leu Gln Glu Ser Glu Leu Gln Arg Lys Gln Gln Leu
65                  70                  75                  80
Arg Asp Gln Glu Asn Lys Phe Gln Met Glu Lys Ser His Leu Lys His
                85                  90                  95
Ile Tyr Glu Lys Lys Ala His Asp Leu Gln Ser Glu Leu Asp Lys Gly
            100                 105                 110
Lys Glu Asp Thr Gln Lys Lys Ile His Lys Phe Glu Glu Ala Leu Lys
        115                 120                 125
Trp Lys Lys Trp Arg Gln Ile Xaa Leu Asp Pro Asn Leu Leu Arg Glu
    130                 135                 140
Lys Gln Ser Lys Glu Phe Leu Trp Gln Leu Glu Asp Ile Arg Gln Arg
145                 150                 155                 160
Tyr Glu Gln Gln Ile Val Glu Leu Lys Leu Glu His Glu Gln Glu Lys
                165                 170                 175
Thr His Leu Leu Gln Gln His Asn Ala Glu Lys Asp Ser Leu Val Arg
        180                 185                 190
Asp His Glu Arg Glu Ile Glu Asn Leu Glu Lys Gln Leu Arg Ala Ala
        195                 200                 205
Asn Met Glu His Glu Asn Gln Ile Gln Glu Phe Lys Lys Arg Asp Ala
210                 215                 220
Gln Val Ile Ala Asp Met Glu Ala Gln Val His Lys Leu Arg Glu Glu
225                 230                 235                 240
Leu Ile Asn Val Asn Ser Gln Arg Lys Gln Gln Leu Val Glu Leu Gly
            245                 250                 255
Leu Leu Arg Glu Glu Glu Lys Gln Arg Ala Thr Arg Glu His Glu Ile
            260                 265                 270
Val Val Asn Lys Leu Lys Ala Glu Ser Glu Lys Met Lys Ile Glu Leu
        275                 280                 285
Lys Lys Thr His Ala Ala Glu Thr Glu Met Thr Leu Glu Lys Ala Asn
    290                 295                 300
Ser Lys Leu Lys Gln Ile Glu Lys Glu Tyr Thr Gln Lys Leu Ala Lys
305                 310                 315                 320
Ser Ser Gln Ile Ile Ala Glu Leu Gln Thr Thr Ile Ser Ser Leu Lys
            325                 330                 335
Glu Glu Asn Ser Gln Gln Gln Leu Ala Ala Glu Arg Arg Leu Gln Asp
            340                 345                 350
Val Arg Gln Lys Phe Glu Asp Glu Lys Lys Gln Leu Ile Arg Asp Asn
    355                 360                 365
Asp Gln Ala Ile Lys Val Leu Gln Asp Glu Leu Glu Asn Arg Ser Asn
370                 375                 380
Gln Val Arg Cys Ala Glu Lys Lys Leu Gln His Lys Glu Leu Glu Ser
385                 390                 395                 400
Gln Glu Gln Ile Thr Tyr Ile Arg Gln Glu Tyr Glu Thr Lys Leu Lys
            405                 410                 415
Gly Leu Met Pro Ala Ser Leu Arg Gln Glu Leu Glu Asp Thr Ile Ser
        420                 425                 430
Ser Leu Lys Ser Gln Val Asn Phe Leu Gln Lys Arg Ala Ser Ile Leu
    435                 440                 445
```

```
Gln Glu Glu Arg Asp Tyr Ile Ser Arg Gln Lys Val Gln Pro Ile Ser
450                     455                 460
Arg Xaa Leu His Glu Arg Met Gln Arg Met Arg Ile Ser Arg Leu Cys
465                     470                 475                 480
Cys Gly Thr Ser Ser Ser Arg Phe Glu Asp Leu Asp Ile Val Asn Cys
                485                 490                 495
Glu Ile Ser Gly Ile Phe
                500     502
```

```
<210> 1067
<211> 301
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(301)
<223> X = any amino acid or stop code
```

```
<400> 1067
Val Ile Asn Leu Val Tyr Leu Ile Ser Ser Pro Arg Pro Glu Leu Lys
1                   5                   10                  15
Pro Val Asp Lys Glu Ser Glu Val Val Met Lys Phe Pro Asp Gly Phe
                20                  25                  30
Glu Lys Phe Ser Pro Pro Ile Leu Gln Leu Asp Glu Val Asp Phe Tyr
                35                  40                  45
Tyr Asp Pro Lys His Val Ile Phe Ser Arg Leu Ser Val Ser Ala Asp
        50                  55                  60
Leu Glu Ser Arg Ile Cys Val Val Gly Glu Asn Gly Ala Gly Lys Ser
65                  70                  75                  80
Thr Met Leu Lys Leu Leu Leu Gly Asp Leu Ala Pro Val Arg Gly Ile
                85                  90                  95
Arg His Ala His Arg Asn Leu Lys Ile Gly Tyr Phe Ser Gln His His
        100                 105                 110
Val Glu Gln Leu Asp Leu Asn Val Gln Cys Leu Trp Glu Leu Ala Gly
        115                 120                 125
His Ala Ser Phe Pro Gly Arg Pro Glu Glu Glu Tyr Arg His Gln Leu
        130                 135                 140
Gly Phe Gly Met Gly Ile Ser Gly Glu Leu Ala Met Arg Pro Leu Cys
145                 150                 155                 160
Gln Pro Val Leu Gly Ala Arg Lys Lys Pro Lys Trp Pro Phe Ala Gln
                165                 170                 175
Met Asp Tyr Cys Pro Ala Pro Thr Phe Tyr Ile Leu Asp Glu Pro Thr
                180                 185                 190
Asn His Leu Gly His Gly Arg Ala Ile Glu Ala Leu Gly Pro Cys Leu
        195                 200                 205
Gln Thr Ile Ser Gly Val Gly Val Ile Leu Val Ser His Glu Xaa Ser
        210                 215                 220
Ala Leu Ser Arg Leu Val Cys Arg Glu Leu Trp Val Cys Xaa Gly Gly
225                 230                 235                 240
Gly Val Thr Arg Val Glu Arg Lys Asp Phe Asp Gln Tyr Arg Ala Leu
                245                 250                 255
Leu Gln Gly Thr Val Ser Ala Arg Glu Gly Phe Pro Leu Gly Pro Pro
                260                 265                 270
Arg Leu Lys Asp Ser Pro Arg Asp Met Gly Leu Val Ser Gln Thr Pro
        275                 280                 285
Trp Gly His His Val Gly Tyr Pro Leu Pro Gly Arg Gly
        290                 295                 300 301
```

586

<210> 1068
<211> 215
<212>Amino acid
<213> Homo sapiens

<400> 1068

Cys	Ser	Ala	Val	Glu	Val	Lys	Met	Ala	Ala	Arg	Thr	Ala	Phe	Gly	Ala
1				5					10					15	
Val	Cys	Arg	Arg	Leu	Trp	Gln	Gly	Leu	Gly	Asn	Phe	Ser	Val	Asn	Thr
			20				25					30			
Ser	Lys	Gly	Asn	Thr	Ala	Lys	Asn	Gly	Gly	Leu	Leu	Leu	Ser	Thr	Asn
		35					40					45			
Met	Lys	Trp	Val	Gln	Phe	Ser	Asn	Leu	His	Val	Asp	Val	Pro	Lys	Asp
	50				55					60					
Leu	Thr	Lys	Pro	Val	Val	Thr	Ile	Ser	Asp	Glu	Pro	Asp	Ile	Leu	Tyr
65				70					75						80
Lys	Arg	Leu	Ser	Val	Leu	Val	Lys	Gly	His	Asp	Lys	Ala	Val	Leu	Asp
			85					90					95		
Ser	Tyr	Glu	Tyr	Phe	Ala	Val	Leu	Ala	Ala	Lys	Glu	Leu	Gly	Ile	Ser
		100				105					110				
Ile	Lys	Val	His	Glu	Pro	Pro	Arg	Lys	Ile	Glu	Arg	Phe	Thr	Leu	Leu
	115				120					125					
Gln	Ser	Val	His	Ile	Tyr	Lys	Lys	His	Arg	Val	Gln	Tyr	Glu	Met	Arg
	130				135					140					
Thr	Leu	Tyr	Arg	Cys	Leu	Glu	Leu	Glu	His	Leu	Thr	Gly	Ser	Thr	Ala
145				150					155					160	
Asp	Val	Tyr	Leu	Glu	Tyr	Ile	Gln	Arg	Asn	Leu	Pro	Glu	Gly	Val	Ala
			165				170					175			
Met	Glu	Val	Thr	Lys	Phe	Cys	Phe	Phe	Ile	Phe	Leu	Thr	Gln	Leu	Glu
		180				185					190				
Gln	Leu	Pro	Glu	His	Ile	Lys	Glu	Pro	Ile	Trp	Glu	Thr	Leu	Ser	Glu
	195				200					205					
Glu	Lys	Glu	Glu	Ser	Lys	Ser									
	210				215										

<210> 1069
<211> 274
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(274)
<223> X = any amino acid or stop code

<400> 1069

Asp	Phe	Trp	Asp	Thr	Ala	Gly	Gln	Glu	Arg	Phe	Gln	Ser	Met	His	Ala
1				5					10					15	
Ser	Tyr	Tyr	His	Lys	Thr	His	Ala	Cys	Ile	Met	Val	Phe	Asp	Val	Gln
			20				25					30			
Arg	Lys	Val	Thr	His	Arg	Asn	Leu	Ser	Thr	Trp	Tyr	Thr	Glu	Leu	Arg
		35					40					45			
Glu	Phe	Arg	Pro	Glu	Ile	Pro	Cys	Ile	Val	Val	Ala	Asn	Lys	Ile	Asp
	50				55					60					

```
Gly Gly Ala Ile Pro Ala Pro Gly Cys Xaa Gln Phe Thr Gly Asp Leu
65              70                  75                  80
Pro Ser Tyr Ile Ser Ser Ser Ile Pro Arg Ala Gly Asn Leu Gln Xaa
                85                  90                  95
Leu Val Leu Pro Pro Thr Ile Arg Tyr Asn Pro Trp Leu Val Ala Cys
            100             105                 110
Ile Leu Pro Thr Leu Xaa Arg Ser Gln Leu Ser Arg Pro Ala Leu Phe
        115             120                 125
Pro Arg His Arg Ser Leu Leu Thr Glu Leu Phe Leu Gly Pro Val Ser
    130             135                 140
Gln Ser Ser Leu Pro Ile Pro Leu Ser Gly Met Lys Ala Ser Ser Gly
145             150                 155                 160
Pro Pro Leu Gln Thr Phe Phe Pro Ser Leu Asp Arg Gln Thr Asn Val
            165                 170                 175
Leu Pro Ser Leu Tyr Ala Asp Ile Asn Val Thr Gln Lys Ser Phe Asn
        180                 185                 190
Phe Ala Lys Lys Phe Ser Leu Pro Leu Tyr Phe Val Ser Ala Ala Asp
    195             200                 205
Gly Thr Asn Val Val Lys Leu Phe Asn Asp Ala Ile Arg Leu Ala Val
210                 215                 220
Ser Tyr Lys Gln Asn Ser Gln Asp Phe Met Asp Glu Ile Phe Gln Glu
225             230                 235                 240
Leu Glu Asn Phe Ser Leu Glu Gln Glu Glu Asp Val Pro Asp Gln
            245                 250                 255
Glu Gln Ser Ser Ser Ile Glu Thr Pro Ser Glu Glu Val Ala Ser Pro
        260                 265                 270
His Ser
274


        <210> 1070
        <211> 368
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(368)
        <223> X = any amino acid or stop code



        <400> 1070
Gly Ala Thr Pro Leu Gly Ser Val Gly Gly Arg Thr Gly Lys Met Asp
1               5                   10                  15
Ala Ala Thr Leu Thr Tyr Asp Thr Leu Arg Phe Ala Glu Phe Glu Asp
                20                  25                  30
Phe Pro Glu Thr Ser Glu Pro Val Trp Ile Leu Gly Arg Lys Tyr Ser
        35                  40                  45
Ile Phe Thr Glu Lys Asp Glu Ile Leu Ser Asp Val Ala Ser Arg Leu
    50                  55                  60
Trp Phe Thr Tyr Arg Lys Asn Phe Pro Ala Ile Gly Gly Thr Gly Pro
65              70                  75                  80
Thr Ser Asp Thr Gly Trp Gly Cys Met Leu Arg Cys Gly Gln Met Ile
                85                  90                  95
Phe Ala Gln Ala Leu Val Cys Arg His Leu Gly Arg Asp Trp Arg Trp
            100             105                 110
Thr Gln Arg Lys Arg Gln Pro Asp Ser Tyr Phe Ser Val Leu Asn Ala
        115             120                 125
Phe Ile Asp Arg Lys Asp Ser Tyr Tyr Ser Ile His Gln Ile Ala Gln
    130             135                 140
Met Gly Val Gly Glu Gly Lys Ser Ile Gly Gln Trp Tyr Gly Pro Asn
```

```
        145                      150                      155                      160
Thr Val Ala Gln Val Leu Lys Lys Leu Ala Val Phe Asp Thr Trp Ser
                165                      170                      175
Ser Leu Ala Val His Ile Ala Met Asp Asn Thr Val Val Met Glu Glu
                180                      185                      190
Ile Arg Arg Leu Cys Arg Thr Ser Val Pro Cys Ala Gly Ala Thr Ala
                195                      200                      205
Phe Pro Ala Asp Ser Asp Arg His Cys Asn Gly Phe Pro Ala Gly Ala
      210                      215                      220
Glu Val Thr Asn Arg Pro Ser Pro Trp Arg Pro Leu Val Leu Leu Ile
225                      230                      235                      240
Pro Leu Arg Leu Gly Leu Thr Asp Ile Asn Glu Ala Tyr Val Glu Thr
                245                      250                      255
Leu Lys His Cys Phe Met Met Pro Gln Ser Leu Gly Val Ile Gly Gly
                260                      265                      270
Lys Pro Asn Ser Ala His Tyr Phe Ile Gly Xaa Val Gly Glu Glu Leu
                275                      280                      285
Ile Tyr Leu Asp Pro His Thr Thr Gln Pro Ala Val Glu Pro Thr Asp
                290                      295                      300
Gly Cys Phe Ile Pro Asp Glu Ser Phe His Cys Gln His Pro Pro Cys
305                      310                      315                      320
Arg Met Ser Ile Ala Glu Leu Asp Pro Ser Ile Ala Val Val Arg Gly
                325                      330                      335
Gly His Leu Ser Thr Gln Ala Phe Gly Ala Glu Cys Cys Leu Gly Met
                340                      345                      350
Thr Arg Lys Thr Phe Gly Phe Leu Arg Phe Phe Phe Ser Met Leu Gly
                355                      360                      365                      368
```

```
<210> 1071
<211> 81
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1071
Ala Leu Cys Val Val Pro Phe Asn Thr Phe His Asn Asp Phe Leu Leu
1               5                       10                      15
Leu Asp Lys Glu Gly Thr Leu Asp Pro Val Met Asp Ser Phe Ser Thr
                20                      25                      30
His Trp Thr Thr Ile Gly Pro Ala Asp Met Phe Phe Ser Phe Arg Gln
        35                      40                      45
His Tyr Lys Asn Phe Lys Ser His Gly Thr Asn Pro Ser Lys Ser Val
      50                      55                      60
Trp Ala His Ala Thr Cys Gln Ser Cys Ala Phe Pro Asn Leu Leu Gly
65                      70                      75                      80
Trp
81
```

```
<210> 1072
<211> 494
<212>Amino acid
<213> Homo sapiens
```

```
        <400> 1072
Thr Arg Leu Ala Glu Phe Gly Thr Arg Asp Pro Cys Ala Gln Ala Pro
 1               5                  10                 15
Cys Glu Gln Gln Cys Glu Pro Gly Gly Pro Gln Gly Tyr Ser Cys His
            20                  25                 30
Cys Arg Leu Gly Phe Arg Pro Ala Glu Asp Asp Pro His Arg Cys Val
        35                  40                 45
Asp Thr Asp Glu Cys Gln Ile Ala Gly Val Cys Gln Gln Met Cys Val
    50                  55                 60
Asn Tyr Val Gly Gly Phe Glu Cys Tyr Cys Ser Glu Gly His Glu Leu
 65                 70                 75                 80
Glu Ala Asp Gly Ile Ser Cys Ser Pro Ala Gly Ala Met Gly Ala Gln
            85                  90                 95
Ala Ser Gln Asp Leu Gly Asp Glu Leu Leu Asp Asp Gly Glu Asp Glu
            100                 105                110
Glu Asp Glu Asp Glu Ala Trp Lys Ala Phe Asn Gly Gly Trp Thr Glu
        115                 120                 125
Met Pro Gly Ile Leu Trp Met Glu Pro Thr Gln Pro Pro Asp Phe Ala
    130                 135                 140
Leu Ala Tyr Arg Pro Ser Phe Pro Glu Asp Arg Glu Pro Gln Ile Pro
145                 150                 155                 160
Tyr Pro Glu Pro Thr Trp Pro Pro Pro Leu Ser Ala Pro Arg Val Pro
            165                 170                 175
Tyr His Ser Ser Val Leu Ser Val Thr Arg Pro Val Val Val Ser Ala
            180                 185                 190
Thr His Pro Thr Leu Pro Ser Ala His Gln Pro Pro Val Ile Pro Ala
            195                 200                 205
Thr His Pro Ala Leu Ser Arg Asp His Gln Ile Pro Val Ile Ala Ala
    210                 215                 220
Asn Tyr Pro Asp Leu Pro Ser Ala Tyr Gln Pro Gly Ile Leu Ser Val
225                 230                 235                 240
Ser His Ser Ala Gln Pro Pro Ala His Gln Pro Pro Met Ile Ser Thr
            245                 250                 255
Lys Tyr Pro Glu Leu Phe Pro Ala His Gln Ser Pro Met Phe Pro Asp
            260                 265                 270
Thr Arg Val Ala Gly Thr Gln Thr Thr Thr His Leu Pro Gly Ile Pro
            275                 280                 285
Pro Asn His Ala Pro Leu Val Thr Thr Leu Gly Ala Gln Leu Pro Pro
    290                 295                 300
Gln Ala Pro Asp Ala Leu Val Leu Arg Thr Gln Ala Thr Gln Leu Pro
305                 310                 315                 320
Ile Ile Pro Thr Ala Gln Pro Ser Leu Thr Thr Thr Ser Arg Ser Pro
            325                 330                 335
Val Ser Pro Ala His Gln Ile Ser Val Pro Ala Ala Thr Gln Pro Ala
            340                 345                 350
Ala Leu Pro Thr Leu Leu Pro Ser Gln Ser Pro Thr Asn Gln Thr Ser
    355                 360                 365
Pro Ile Ser Pro Thr His Pro His Ser Lys Ala Pro Gln Ile Pro Arg
    370                 375                 380
Glu Asp Gly Pro Ser Pro Lys Leu Ala Leu Trp Leu Pro Ser Pro Ala
385                 390                 395                 400
Pro Thr Ala Ala Pro Thr Ala Leu Gly Glu Ala Gly Leu Ala Glu His
            405                 410                 415
Ser Gln Arg Asp Asp Arg Trp Leu Leu Val Ala Leu Leu Val Pro Thr
            420                 425                 430
Cys Val Phe Leu Val Val Leu Leu Ala Leu Gly Ile Val Tyr Cys Thr
            435                 440                 445
Arg Cys Gly Pro His Ala Pro Asn Lys Arg Ile Thr Asp Cys Tyr Arg
    450                 455                 460
Trp Val Ile His Ala Gly Ser Lys Ser Pro Thr Glu Pro Met Pro Pro
465                 470                 475                 480
Arg Gly Ser Leu Thr Gly Val Gln Thr Cys Arg Thr Ser Val
            485                 490                 494
```

590

<210> 1073
<211> 468
<212>Amino acid
<213> Homo sapiens

<400> 1073

```
Leu Arg Val Arg Arg Arg Pro His Leu Pro Ala Pro Pro Ala Leu Arg
1               5                   10                  15
Ala Arg Arg Ser Asp Arg Arg Ser Ser Arg Ala Pro Ala Ala Phe Pro
            20                  25                  30
Pro Arg Pro Pro His Ala Ser Pro Ala Pro Gly Pro Ala Met Ala Gln
            35                  40                  45
Ala Val Trp Ser Arg Leu Gly Arg Ile Leu Trp Leu Ala Cys Leu Leu
    50                  55                  60
Pro Trp Ala Pro Ala Gly Val Ala Ala Gly Leu Tyr Glu Leu Asn Leu
65                  70                  75                  80
Thr Thr Asp Ser Pro Ala Thr Thr Gly Ala Val Val Thr Ile Ser Ala
            85                  90                  95
Ser Leu Val Ala Lys Asp Asn Gly Ser Leu Ala Leu Pro Ala Asp Ala
            100                 105                 110
His Leu Tyr Arg Phe His Trp Ile His Thr Pro Leu Val Leu Thr Gly
    115                 120                 125
Lys Met Glu Lys Gly Leu Ser Ser Thr Ile Arg Val Val Gly His Val
    130                 135                 140
Pro Gly Glu Phe Pro Val Ser Val Trp Val Thr Ala Ala Asp Cys Trp
145                 150                 155                 160
Met Cys Gln Pro Val Ala Arg Gly Phe Val Val Leu Pro Ile Thr Glu
            165                 170                 175
Phe Leu Val Gly Asp Leu Val Val Thr Gln Asn Thr Ser Leu Pro Trp
            180                 185                 190
Pro Ser Ser Tyr Leu Thr Lys Thr Val Leu Lys Val Ser Phe Leu Leu
    195                 200                 205
His Asp Pro Ser Asn Phe Leu Lys Thr Ala Leu Phe Leu Tyr Ser Trp
    210                 215                 220
Asp Phe Gly Asp Gly Thr Gln Met Val Thr Glu Asp Ser Val Val Tyr
225                 230                 235                 240
Tyr Asn Tyr Ser Ile Ile Gly Thr Phe Thr Val Lys Leu Lys Val Val
            245                 250                 255
Ala Glu Trp Glu Glu Val Glu Pro Asp Ala Thr Arg Ala Val Lys Gln
            260                 265                 270
Lys Thr Gly Asp Phe Ser Ala Ser Leu Lys Leu Gln Glu Thr Leu Arg
    275                 280                 285
Gly Ile Gln Val Leu Gly Pro Thr Leu Ile Gln Thr Phe Gln Lys Met
    290                 295                 300
Thr Val Thr Leu Asn Phe Leu Gly Ser Pro Pro Leu Thr Val Cys Trp
305                 310                 315                 320
Arg Leu Lys Pro Glu Cys Leu Pro Leu Glu Glu Gly Glu Cys His Pro
            325                 330                 335
Val Ser Val Ala Ser Thr Ala Tyr Asn Leu Thr His Thr Phe Arg Asp
            340                 345                 350
Pro Gly Asp Tyr Cys Phe Ser Ile Arg Ala Glu Asn Ile Ile Ser Lys
    355                 360                 365
Thr His Gln Tyr His Lys Ile Gln Val Trp Pro Ser Arg Ile Gln Pro
    370                 375                 380
Ala Val Phe Ala Phe Pro Cys Ala Thr Leu Ile Thr Val Met Leu Ala
385                 390                 395                 400
Phe Ile Met Tyr Met Thr Leu Arg Asn Ala Thr Gln Gln Lys Asp Met
            405                 410                 415
Val Glu Asn Pro Glu Pro Pro Ser Gly Val Arg Cys Cys Cys Gln Met
```

```
                    420                  425                  430
Cys Cys Gly Pro Phe Leu Leu Glu Thr Pro Ser Glu Tyr Leu Glu Ile
            435                  440                  445
Val Arg Glu Asn His Gly Leu Leu Pro Pro Leu Tyr Lys Ser Val Lys
    450              455                  460
Thr Tyr Thr Val
465          468
```

```
    <210> 1074
    <211> 288
    <212> Amino acid
    <213> Homo sapiens
```

```
    <400> 1074
Val Val Glu Phe Ala Phe Gln Leu Ser Ser Val Ser Val Cys Leu Thr
1                5                    10                   15
Val Ser Phe Gly Trp Gln Leu Gly Thr Val Ser Ser Cys Leu Ser Arg
            20                   25                   30
Asp Trp Phe Leu Lys Gly Asn Leu Leu Ile Ile Ile Val Ser Val Leu
            35                   40                   45
Ile Ile Leu Pro Leu Ala Leu Met Lys His Leu Gly Tyr Leu Gly Tyr
    50                   55                   60
Thr Ser Gly Leu Ser Leu Thr Cys Met Leu Phe Phe Leu Val Ser Val
65                   70                   75                   80
Ile Tyr Lys Lys Phe Gln Leu Gly Cys Ala Ile Gly His Asn Glu Thr
                85                   90                   95
Ala Met Glu Ser Glu Ala Leu Val Gly Leu Pro Ser Gln Gly Leu Asn
            100                  105                  110
Ser Ser Cys Glu Ala Gln Met Phe Thr Val Asp Ser Gln Met Ser Tyr
        115                  120                  125
Thr Val Pro Ile Met Ala Phe Ala Phe Val Cys His Pro Glu Val Leu
    130                  135                  140
Pro Ile Tyr Thr Glu Leu Cys Arg Pro Ser Lys Arg Arg Met Gln Ala
145                  150                  155                  160
Val Ala Asn Val Ser Ile Gly Ala Met Phe Cys Met Tyr Gly Leu Thr
            165                  170                  175
Ala Thr Phe Gly Tyr Leu Thr Phe Tyr Ser Ser Val Lys Ala Glu Met
            180                  185                  190
Leu His Met Tyr Ser Gln Lys Asp Pro Leu Ile Leu Cys Val Arg Leu
        195                  200                  205
Ala Val Leu Leu Ala Val Thr Leu Thr Val Pro Val Val Leu Phe Pro
    210                  215                  220
Ile Arg Arg Ala Leu Gln Gln Leu Leu Phe Pro Gly Lys Ala Phe Ser
225                  230                  235                  240
Trp Pro Arg His Val Ala Ile Ala Leu Ile Leu Leu Val Leu Val Asn
            245                  250                  255
Val Leu Val Ile Cys Val Pro Thr Ile Arg Asp Ile Phe Gly Val Ile
            260                  265                  270
Gly Ser Thr Ser Ala Pro Ser Leu Ile Phe Ile Leu Pro Ser Cys Ile
        275                  280                  285          288
```

```
    <210> 1075
    <211> 273
    <212> Amino acid
    <213> Homo sapiens
```

```
<220>
<221> misc_feature
<222> (1)...(273)
<223> X = any amino acid or stop code
```

```
<400> 1075
Gly Ala Gly Ser Lys Ser Ser Met Met Gln Leu Met His Leu Glu Ser
1               5                   10                  15
Phe Tyr Glu Lys Pro Pro Pro Gly Leu Ile Lys Glu Asp Asp Thr Lys
            20                  25                  30
Pro Glu Asp Cys Ile Pro Asp Val Pro Gly Asn Glu His Ala Arg Glu
        35                  40                  45
Phe Leu Ala His Thr Pro Thr Lys Gly Leu Trp Met Pro Leu Glu Lys
    50                  55                  60
Glu Val Lys Val Lys His Cys Thr Phe His Trp Ile Ala Ser Xaa Phe
65              70                  75                  80
Leu Gly Asp Gly Lys Phe Ile Pro Lys Ala Thr Arg Leu Lys Asp Val
                85                  90                  95
Trp Val Ser Asn Xaa Phe Thr Cys Leu Phe Trp Asp Leu Thr Arg Phe
            100                 105                 110
Ile His Asp Cys Ile Phe Phe Xaa Asn Trp Ser Leu Met Asn Lys Asn
    115                 120                 125
Phe Asn Ile Ile Tyr Xaa Phe Phe Ile Ser Leu Arg Xaa Asn Thr Leu
    130                 135                 140
Ile Leu Gln Lys Tyr Phe Pro Phe Ser Leu Leu Leu Gly Trp His Cys
145                 150                 155                 160
Lys Trp Tyr Gly His Arg Thr Gly Tyr Lys Glu Cys Pro Phe Phe Ile
            165                 170                 175
Lys Asp Asn Gln Lys Leu Gln Gln Phe Arg Val Ala His Glu Asp Phe
            180                 185                 190
Met Tyr Asp Ile Ile Arg Asp Asn Lys Gln His Glu Lys Asn Val Arg
        195                 200                 205
Ile Gln Gln Leu Lys Gln Leu Leu Glu Asp Ser Thr Ser Gly Glu Asp
    210                 215                 220
Arg Ser Ser Ser Ser Ser Ser Glu Gly Lys Glu Lys His Lys Lys Lys
225                 230                 235                 240
Lys Lys Lys Glu Lys His Lys Lys Arg Lys Lys Glu Lys Lys Lys Lys
            245                 250                 255
Lys Lys Arg Lys His Lys Ser Ser Lys Ser Asn Glu Gly Ser Asp Ser
        260                 265                 270
Glu
273
```

```
<210> 1076
<211> 815
<212>Amino acid
<213> Homo sapiens
```

```
<220>
<221> misc_feature
<222> (1)...(815)
<223> X = any amino acid or stop code
```

```
<400> 1076
Glu Ile Ala Gly Ala Ala Ala Glu Asn Met Leu Gly Ser Leu Leu Cys
```

```
    1                    5                    10                    15
Leu Pro Gly Ser Gly Ser Val Leu Leu Asp Pro Cys Thr Gly Ser Thr
              20                     25                    30
Ile Ser Glu Thr Thr Ser Glu Ala Trp Ser Val Glu Val Leu Pro Ser
              35                     40                    45
Asp Ser Glu Ala Pro Asp Leu Lys Gln Glu Glu Arg Leu Gln Glu Leu
        50                     55                    60
Glu Ser Cys Ser Gly Leu Gly Ser Thr Ser Asp Asp Thr Asp Val Arg
65                     70                    75                    80
Glu Val Ser Ser Arg Pro Ser Thr Pro Gly Leu Ser Val Val Ser Gly
                   85                    90                    95
Ile Ser Ala Thr Ser Glu Asp Ile Pro Asn Lys Ile Glu Asp Leu Arg
              100                    105                   110
Ser Glu Cys Ser Ser Asp Phe Gly Gly Lys Asp Ser Val Thr Ser Pro
        115                    120                   125
Asp Met Asp Glu Ile Thr His Asp Phe Leu Tyr Ile Leu Gln Pro Lys
        130                    135                   140
Gln His Phe Gln His Ile Glu Ala Glu Ala Asp Met Arg Ile Gln Leu
145                    150                   155                   160
Ser Ser Ser Ala His Gln Leu Thr Ser Pro Pro Ser Gln Ser Glu Ser
              165                    170                   175
Leu Leu Ala Met Phe Asp Pro Leu Ser Ser His Glu Gly Ala Ser Ala
              180                    185                   190
Val Val Arg Pro Lys Val His Tyr Ala Arg Pro Ser His Pro Pro Pro
              195                    200                   205
Asp Pro Pro Ile Leu Glu Gly Ala Val Gly Gly Asn Glu Ala Arg Leu
        210                    215                   220
Pro Asn Phe Gly Ser Pro Met Phe Xaa Leu Pro Ala Glu Met Glu Ala
225                    230                   235                   240
Phe Lys Gln Arg His Ser Tyr Thr Pro Glu Arg Leu Val Arg Ser Arg
              245                    250                   255
Ser Ser Asp Ile Val Ser Ser Val Arg Arg Pro Met Ser Asp Pro Ser
              260                    265                   270
Trp Asn Arg Arg Pro Gly Asn Glu Glu Arg Glu Leu Pro Pro Ala Ala
        275                    280                   285
Ala Ile Gly Ala Thr Ser Leu Val Ala Ala Pro His Ser Ser Ser Ser
        290                    295                   300
Ser Pro Ser Lys Asp Ser Ser Arg Gly Glu Thr Glu Glu Arg Lys Asp
305                    310                   315                   320
Ser Asp Asp Glu Lys Ser Asp Arg Asn Arg Pro Trp Trp Arg Lys Arg
              325                    330                   335
Phe Val Ser Ala Met Pro Lys Ala Pro Ile Pro Phe Arg Lys Lys Glu
              340                    345                   350
Lys Gln Glu Lys Asp Lys Asp Asp Leu Gly Pro Asp Arg Phe Ser Thr
        355                    360                   365
Leu Thr Asp Asp Pro Ser Pro Arg Leu Ser Ala Gln Ala Gln Val Ala
     370                    375                   380
Glu Asp Ile Leu Asp Lys Tyr Arg Asn Ala Ile Lys Arg Thr Ser Pro
385                    390                   395                   400
Ser Asp Gly Ala Met Ala Asn Tyr Glu Ser Thr Glu Val Met Gly Asp
              405                    410                   415
Gly Glu Ser Ala His Asp Ser Pro Arg Asp Glu Ala Leu Gln Asn Ile
        420                    425                   430
Ser Ala Asp Asp Leu Pro Asp Ser Ala Ser Gln Ala Ala His Pro Gln
        435                    440                   445
Asp Ser Ala Phe Ser Tyr Arg Asp Ala Lys Lys Lys Leu Arg Leu Ala
450                    455                   460
Leu Cys Ser Ala Asp Ser Val Ala Phe Pro Val Leu Thr His Ser Thr
465                    470                   475                   480
Arg Asn Gly Leu Pro Asp His Thr Asp Pro Glu Asp Asn Glu Ile Val
              485                    490                   495
Cys Phe Leu Lys Val Gln Ile Ala Glu Ala Ile Asn Leu Gln Asp Lys
              500                    505                   510
Asn Leu Met Ala Gln Leu Gln Glu Thr Met Arg Cys Val Cys Arg Phe
```

```
             515                    520                    525
Asp Asn Arg Thr Cys Arg Lys Leu Leu Ala Ser Ile Ala Glu Asp Tyr
    530                    535                    540
Arg Lys Arg Ala Pro Tyr Ile Ala Tyr Leu Thr Arg Cys Arg Gln Gly
545                    550                    555                    560
Leu Gln Thr Thr Gln Ala His Leu Glu Arg Leu Leu Gln Arg Val Leu
                565                    570                    575
Arg Asp Lys Glu Val Ala Asn Arg Tyr Phe Thr Thr Val Cys Val Arg
            580                    585                    590
Leu Leu Leu Glu Ser Lys Glu Lys Lys Ile Arg Glu Phe Ile Gln Asp
            595                    600                    605
Phe Gln Lys Leu Thr Ala Ala Asp Asp Lys Thr Ala Gln Val Glu Asp
    610                    615                    620
Phe Leu Gln Phe Leu Tyr Gly Ala Met Ala Gln Asp Val Ile Trp Gln
625                    630                    635                    640
Asn Ala Ser Glu Glu Gln Leu Gln Asp Ala Gln Leu Ala Ile Glu Arg
                645                    650                    655
Ser Val Met Asn Arg Ile Phe Lys Leu Ala Phe Tyr Pro Asn Gln Asp
            660                    665                    670
Gly Asp Ile Leu Arg Asp Gln Val Leu His Glu His Ile Gln Arg Leu
            675                    680                    685
Ser Lys Val Val Thr Ala Asn His Arg Ala Leu Gln Ile Pro Glu Val
    690                    695                    700
Tyr Leu Arg Glu Ala Pro Trp Pro Ser Ala Gln Ser Glu Ile Arg Thr
705                    710                    715                    720
Ile Ser Ala Tyr Lys Thr Pro Arg Asp Lys Val Gln Cys Ile Leu Arg
                725                    730                    735
Met Cys Ser Thr Ile Met Asn Leu Leu Ser Leu Ala Asn Glu Asp Ser
            740                    745                    750
Val Pro Gly Ala Asp Asp Phe Val Pro Val Leu Val Phe Val Leu Ile
            755                    760                    765
Lys Ala Asn Pro Pro Cys Leu Leu Ser Thr Val Gln Tyr Ile Ser Ser
    770                    775                    780
Phe Tyr Ala Ser Cys Leu Ser Gly Glu Glu Ser Tyr Trp Trp Met Gln
785                    790                    795                    800
Phe Thr Ala Ala Val Glu Phe Ile Lys Thr Ile Asp Asp Arg Lys
                805                    810                    815
```

```
<210> 1077
<211> 256
<212> Amino acid
<213> Homo sapiens
```

```
    <400> 1077
Trp Pro Met Ser Leu Ala Arg Gly His Gly Asp Thr Ala Ala Ser Thr
1                   5                   10                  15
Ala Ala Pro Leu Ser Glu Glu Gly Glu Val Thr Ser Gly Leu Gln Ala
                20                  25                  30
Leu Ala Val Glu Asp Thr Gly Gly Pro Ser Ala Ser Ala Gly Lys Ala
            35                  40                  45
Glu Asp Glu Gly Glu Gly Gly Arg Glu Glu Thr Glu Arg Glu Gly Ser
    50                  55                  60
Gly Gly Glu Glu Ala Gln Gly Glu Val Pro Ser Ala Gly Gly Glu Glu
65                  70                  75                  80
Pro Ala Glu Glu Asp Ser Glu Asp Trp Cys Val Pro Cys Ser Asp Glu
                85                  90                  95
Glu Val Glu Leu Pro Ala Asp Gly Gln Pro Trp Met Pro Pro Pro Ser
            100                 105                 110
Glu Ile Gln Arg Leu Tyr Glu Leu Leu Ala Ala His Gly Thr Leu Glu
```

```
               115                    120                    125
Leu Gln Ala Glu Ile Leu Pro Arg Arg Pro Pro Thr Pro Glu Ala Gln
   .130                   135                    140     .
Ser Glu Glu Glu Arg Ser Asp Glu Glu Pro Glu Ala .Lys Glu Glu Glu
145                    150                    155                    160
Glu Glu Lys Pro His Met Pro Thr Glu Phe Asp Phe Asp Asp Glu Pro
               165                    170                    175
Val Thr Pro Lys Asp Ser Leu Ile Asp Arg Arg Arg Thr Pro Gly Ser
               180                    185                    190
Ser Ala Arg Ser Gln Lys Arg Glu Ala Arg Leu Asp Lys Val Leu Ser
       195                    200                    205
Asp Met Lys Arg His Lys Lys Leu Glu Glu Gln Ile Leu Arg Thr Gly
       210                    215                    220
Arg Asp Leu Phe Ser Leu Asp Ser Glu Asp Pro Ser Pro Ala Ser Pro
225                    230 ·                   235                    240
Pro Leu Arg Ser Ser Gly Ser Ser Leu Phe Pro Arg Gln Arg Lys Tyr
               245                    250                    255 256
```

```
<210> 1078
<211> 590
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(590)
<223> X = any amino acid or stop code
```

```
    <400> 1078
Leu Gly Arg Gly Thr Phe Gly Gln Val Val Xaa Cys Trp Lys Arg Gly
 1               5                    10                    15
Thr Asn Glu Ile Val Ala Ile Lys Ile Leu Lys Asn His Pro Ser Tyr
               20                    25                    30
Ala Arg Gln Gly Gln Ile Glu Val Ser Ile Leu Ala Arg Leu Ser Thr
           35                    40                    45
·Glu Ser Ala Asp Asp Tyr Asn Phe Val Arg Ala Tyr Glu Cys Phe Gln
   .50                    55                    60
His Lys Asn His Thr Cys Leu Val Phe Glu Met Leu Glu Gln Asn Leu
65                    70                    75                    80
Tyr Asp Phe Leu Lys Gln Asn Lys Phe Ser Pro Leu Pro Leu Lys Tyr
               85 ·                  90                    95
Ile Arg Pro Val Leu Gln Gln Val Ala Thr Ala Leu Met Lys Leu Lys
               100                   105                   110
Ser Leu Gly Leu Ile His Ala Asp Leu Lys Pro Glu Asn Ile Met Leu
       115                   120                   125
Val Asp Pro Ser Arg Gln Pro Tyr Arg Val Lys Val Ile Asp Phe Gly
       130                   135                   140
Ser Ala Ser His Val Ser Lys Ala Val Cys Ser Thr Tyr Leu Gln Ser
145                   150                   155                   160
Arg Tyr. Tyr Arg Ala Pro Glu Ile Ile Leu Gly Leu Pro Phe Cys Glu
               165                   170                   175
Ala Ile Asp Met Trp Ser Leu Gly Cys Val Ile Ala Glu Leu Phe Leu
               180                   185                   190
Gly Trp Pro Leu Tyr Pro Gly Ala Ser Glu Tyr Asp Gln Ile Arg Tyr
       195                   200                   205 .
Ile Ser Gln Thr Gln Gly Leu Pro Ala Glu Tyr Leu Leu Ser Ala Gly
       210                   215                   220
```

Thr Lys Thr Thr Arg Phe Phe Asn Arg Asp Thr Asp Ser Pro Tyr Pro
225   230   235   240
Leu Trp Arg Leu Lys Thr Pro Asp Asp His Glu Ala Glu Thr Gly Ile
                245   250   255
Lys Ser Lys Glu Ala Arg Lys Tyr Ile Phe Asn Cys Leu Asp Asp Met
        260   265   270
Ala Gln Val Asn Met Thr Thr Asp Leu Glu Gly Ser Asp Met Leu Val
        275   280   285
Glu Lys Ala Val Arg Arg Glu Phe Ile Asp Leu Leu Lys Lys Met Leu
    290   295   300
Ser Ile Asp Ser Val Lys Arg Phe Ser Pro Val Gly Ser Leu Asn His
305   310   315   320
Pro Phe Val Thr Met Ser Leu Phe Leu Asp Phe Pro His Ser Thr His
                325   330   335
Val Lys Ser Cys Phe Gln Asn Met Glu Ile Cys Lys Arg Arg Val Asn
            340   345   350
Met Tyr Asp Thr Val Asn Gln Ser Lys Thr Pro Phe Ile Thr His Val
        355   360   365
Ala Pro Ser Thr Ser Thr Asn Leu Thr Met Thr Phe Asn Asn Gln Leu
    370   375   380
Thr Thr Val His Asn Gln Pro Ser Ala Ala Ser Met Ala Ala Val Ala
385   390   395   400
Gln Arg Ser Met Pro Leu Gln Thr Gly Thr Ala Gln Ile Cys Ala Arg
            405   410   415
Pro Asp Pro Phe Gln Gln Ala Leu Ile Val Cys Pro Pro Gly Phe Gln
            420   425   430
Gly Leu Gln Ala Ser Pro Ser Lys His Ala Gly Tyr Ser Val Arg Met
        435   440   445
Glu Asn Ala Val Pro Ile Val Thr Gln Ala Pro Gly Ala Gln Pro Leu
    450   455   460
Gln Ile Gln Pro Gly Leu Leu Ala Gln Gln Ala Trp Pro Ser Gly Thr
465   470   475   480
Gln Gln Ile Leu Leu Pro Pro Ala Trp Gln Gln Leu Thr Gly Val Ala
                485   490   495
Thr His Thr Ser Val Gln His Ala Ala Val Ile Pro Glu Thr Met Ala
            500   505   510
Gly Thr Gln Gln Leu Ala Asp Trp Arg Asn Thr His Ala His Gly Ser
        515   520   525
His Tyr Asn Pro Ile Met Gln Gln Pro Ala Leu Leu Thr Gly His Val
    530   535   540
Thr Leu Pro Ala Ala Gln Pro Leu Asn Val Gly Val Ala His Val Met
545   550   555   560
Arg Gln Gln Pro Thr Ser Thr Thr Ser Ser Arg Lys Ser Lys Gln His
            565   570   575
Leu Tyr Cys Gly Arg Ala Arg Val Ser Lys Ile Ala Ser Arg
        580   585   590

<210> 1079
<211> 904
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(904)
<223> X = any amino acid or stop code

<400> 1079
Glu Phe Ala Ile Cys Arg Tyr Pro Leu Gly Met Ser Gly Gly Gln Ile

597

```
     1                    5                    10                   15
Pro Asp Glu Asp Ile Thr Ala Ser Ser Gln Trp Ser Glu Ser Thr Ala
                    20                   25                   30
Ala Lys Tyr Gly Arg Leu Asp Ser Glu Glu Gly Asp Gly Ala Trp Cys
         35                   40                   45
Pro Glu Ile Pro Val Glu Pro Asp Asp Leu Lys Glu Phe Leu Gln Ile
     50                   55                   60
Asp Leu His Thr Leu His Phe Ile Thr Leu Val Gly Thr Gln Gly Arg
65                   70                   75                   80
His Ala Gly Gly His Gly Ile Glu Phe Ala Pro Met Tyr Lys Ile Asn
              85                   90                   95
Tyr Ser Arg Asp Gly Thr Arg Trp Ile Ser Trp Arg Asn Arg His Gly
         100                  105                  110
Lys Gln Val Leu Asp Gly Asn Ser Asn Pro Tyr Asp Ile Phe Leu Lys
         115                  120                  125
Asp Leu Glu Pro Pro Ile Val Ala Arg Phe Val Arg Phe Ile Pro Val
     130                  135                  140
Thr Asp His Ser Met Asn Val Cys Met Arg Val Glu Leu Tyr Gly Cys
145                  150                  155                  160
Val Trp Leu Asp Gly Leu Val Ser Tyr Asn Ala Pro Ala Gly Gln Gln
              165                  170                  175
Phe Val Leu Pro Gly Gly Ser Ile Ile Tyr Leu Asn Asp Ser Val Tyr
              180                  185                  190
Asp Gly Ala Val Gly Tyr Ser Met Thr Glu Gly Leu Gly Gln Leu Thr
         195                  200                  205
Asp Gly Val Ser Gly Leu Asp Asp Phe Thr Gln Thr His Glu Tyr His
         210                  215                  220
Val Trp Pro Gly Tyr Asp Tyr Val Gly Trp Arg Asn Glu Ser Ala Thr
225                  230                  235                  240
Asn Gly Tyr Ile Glu Ile Met Phe Glu Phe Asp Arg Ile Arg Asn Phe
              245                  250                  255
Thr Thr Met Lys Val His Cys Asn Asn Met Phe Ala Lys Gly Val Lys
              260                  265                  270
Ile Phe Lys Glu Val Gln Cys Tyr Phe Arg Ser Glu Ala Ser Glu Trp
              275                  280                  285
Glu Pro Asn Ala Ile Ser Phe Pro Leu Val Leu Asp Asp Val Asn Pro
         290                  295                  300
Ser Ala Arg Phe Val Thr Val Pro Leu His His Arg Met Ala Ser Ala
305                  310                  315                  320
Ile Lys Cys Gln Tyr His Phe Ala Asp Thr Trp Met Met Phe Ser Glu
              325                  330                  335
Ile Thr Phe Gln Ser Asp Ala Ala Met Tyr Asn Asn Ser Glu Ala Leu
              340                  345                  350
Pro Thr Ser Pro Met Ala Pro Thr Thr Tyr Asp Pro Met Leu Lys Val
         355                  360                  365
Asp Asp Ser Asn Thr Arg Ile Leu Ile Gly Cys Leu Val Ala Ile Ile
     370                  375                  380
Phe Ile Leu Leu Ala Ile Ile Val Ile Ile Leu Trp Arg Gln Phe Trp
385                  390                  395                  400
Gln Lys Met Leu Glu Lys Ala Ser Arg Arg Met Leu Asp Asp Glu Met
              405                  410                  415
Thr Val Ser Leu Ser Leu Pro Ser Asp Ser Ser Met Phe Asn Asn Asn
              420                  425                  430
Arg Ser Ser Ser Pro Ser Glu Gln Gly Ser Asn Ser Thr Tyr Asp Arg
         435                  440                  445
Ile Phe Pro Leu Arg Pro Asp Tyr Gln Glu Pro Ser Arg Leu Ile Arg
     450                  455                  460
Lys Leu Pro Glu Phe Ala Pro Gly Glu Glu Glu Ser Gly Cys Ser Gly
465                  470                  475                  480
Val Val Lys Pro Val Gln Pro Ser Gly Pro Glu Gly Val Pro His Tyr
              485                  490                  495
Ala Glu Ala Asp Ile Val Asn Leu Gln Gly Val Thr Gly Gly Asn Thr
         500                  505                  510
Tyr Ser Val Pro Ala Val Thr Met Asp Leu Leu Ser Gly Lys Arg Cys
```

```
                515                    520                    525
Gly Cys Gly Arg Glu Phe Pro Pro Gly Lys Leu Leu Thr Phe Lys Glu
    530                      535                 540
Lys Leu Gly Glu Gly Gln Phe Gly Glu Val His Leu Cys Glu Val Glu
545                      550                 555                      560
Gly Met Glu Lys Phe Lys Asp Lys Asp Phe Ala Leu Asp Val Ser Ala
                565                      570                 575
Asn Gln Pro Val Leu Val Ala Val Lys Met Leu Arg Ala Asp Ala Asn
            580                      585                 590
Lys Asn Ala Arg Asn Asp Phe Leu Lys Glu Ile Lys Ile Met Ser Arg
        595                      600                 605
Leu Lys Asp Pro Asn Ile Ile His Leu Leu Ser Val Cys Ile Thr Asp
    610                      615                 620
Asp Pro Leu Cys Met Ile Thr Glu Tyr Met Glu Asn Gly Asp Leu Asn
625                      630                 635                      640
Gln Phe Leu Ser Arg His Glu Pro Pro Asn Ser Ser Ser Ser Asp Val
                645                      650                 655
Arg Thr Val Ser Tyr Thr Asn Leu Lys Phe Met Ala Thr Gln Ile Ala
            660                      665                 670
Ser Gly Met Lys Tyr Leu Ser Ser Leu Asn Phe Val His Arg Asp Leu
        675                      680                 685
Ala Thr Arg Asn Cys Leu Val Gly Lys Asn Tyr Thr Ile Lys Ile Ala
     690                      695                 700
Asp Phe Gly Met Ser Arg Asn Leu Tyr Ser Gly Asp Tyr Tyr Arg Ile
705                      710                 715                      720
Gln Gly Arg Ala Val Leu Pro Ile Arg Trp Met Ser Trp Glu Ser Ile
            725                      730                 735
Leu Leu Gly Lys Phe Thr Thr Ala Ser Asp Val Trp Ala Phe Gly Val
        740                      745                 750
Thr Leu Trp Glu Thr Phe Thr Phe Cys Gln Arg Lys Gly Pro Tyr Ser
    755                      760                 765
Gln Leu Ser Asp Glu Thr Gly Tyr Xaa Arg Asn Thr Gly Glu Phe Phe
    770                      775                 780
Pro Arg Pro Lys Gly Gly Gln Thr Tyr Leu Pro Ser Thr Ser Pro Phe
785                      790                 795                      800
Val Pro Asp Ser Cys Val Ile Lys Leu Met Leu Ser Cys Trp Arg Arg
            805                      810                 815
Asp Thr Lys Asn Arg Pro Ser Phe Gln Glu Ile His Leu Leu Leu Leu
        820                      825                 830
Gln Gln Gly Asp Glu Arg Cys Cys Gln Cys Leu Ala Met Phe Leu Arg
        835                      840                 845
Leu Arg Ser Ser Leu Gln Asp Leu Pro Leu Thr His Ala Tyr Ala Thr
    850                      855                 860
Pro Ser Gly His Leu Met Lys Leu Arg Asp Arg Gly Leu Phe Ala Leu
865                      870                 875                      880
Pro Ser Phe Pro Gly His Pro His Ser Leu Pro Leu Thr His Ile Tyr
                885                      890                 895
Phe Phe Phe Phe Thr Leu Lys Asn
            900                      904
```

```
        <210> 1080
        <211> 304
        <212>Amino acid
        <213> Homo sapiens




        <400> 1080
Cys Ser Ala Ser Pro Leu Arg Pro Gly Leu Leu Ala Pro Asp Leu Leu
1                 5                   10                   15
Tyr Leu Pro Gly Ala Gly Gln Pro Arg Arg Pro Glu Ala Glu Pro Gly
```

```
                        20                      25                      30
Gln Lys Pro Val Val Pro Thr Leu Tyr Val Thr Glu Ala Glu Ala His
            35                      40                      45
Ser Pro Ala Leu Pro Gly Leu Ser Gly Pro Gln Pro Lys Trp Val Glu
        50                      55                      60
Val Glu Glu Thr Ile Glu Val Arg Val Lys Lys Met Gly Pro Gln Gly
    65                      70                      75                      80
Val Ser Pro Thr Thr Glu Val Pro Arg Ser Ser Ser Gly His Leu Phe
                        85                      90                      95
Thr Leu Pro Gly Ala Thr Pro Gly Gly Asp Pro Asn Ser Asn Asn Ser
                100                     105                     110
Asn Asn Lys Leu Leu Ala Gln Glu Ala Trp Ala Gln Gly Thr Ala Met
            115                     120                     125
Val Gly Val Arg Glu Pro Leu Val Phe Arg Val Asp Ala Arg Gly Ser
        130                     135                     140
Val Asp Trp Ala Ala Ser Gly Met Gly Ser Leu Glu Glu Glu Gly Thr
    145                     150                     155                     160
Met Glu Glu Ala Gly Glu Glu Glu Gly Glu Asp Gly Asp Ala Phe Val
                165                     170                     175
Thr Glu Glu Ser Gln Asp Thr His Ser Leu Gly Asp Arg Asp Pro Lys
                180                     185                     190
Ile Leu Thr His Asn Gly Arg Met Leu Thr Leu Ala Asp Leu Glu Asp
            195                     200                     205
Tyr Val Pro Gly Glu Gly Glu Thr Phe His Cys Gly Gly Pro Gly Pro
        210                     215                     220
Gly Ala Pro Asp Asp Pro Pro Cys Glu Val Ser Val Ile Gln Arg Glu
    225                     230                     235                     240
Ile Gly Glu Pro Thr Val Gly Ser Leu Cys Cys Ser Ala Trp Gly Met
                245                     250                     255
His Trp Val Pro Glu Ala Leu Ser Ala Ser Leu Gly Leu Ser Pro Met
                260                     265                     270
Gly Arg His His Arg Asp Pro Arg Ser Val Ala Leu Arg Ala Pro Pro
            275                     280                     285
Ser Ser Cys Gly Arg Pro Arg Leu Gly Leu Trp Ala Val Leu Pro Gly
        290                     295                     300                     304
```

```
    <210> 1081
    <211> 139
    <212> Amino acid
    <213> Homo sapiens
```

```
    <400> 1081
Gln Gly Leu Ala Ala Glu Phe Leu Gln Val Pro Ala Val Thr Arg Ala
1               5                       10                      15
Tyr Thr Ala Ala Cys Val Leu Thr Thr Ala Ala Val Gln Leu Glu Leu
            20                      25                      30
Leu Ser Pro Phe Gln Leu Tyr Phe Asn Pro His Leu Val Phe Arg Lys
        35                      40                      45
Phe Gln Ala Pro Phe Leu Pro Trp Ala Leu Met Gly Phe Ser Leu Leu
    50                      55                      60
Leu Gly Asn Ser Ile Leu Val Asp Leu Leu Gly Ile Ala Val Gly His
65                      70                      75                      80
Ile Tyr Tyr Phe Leu Glu Asp Val Phe Pro Asn Gln Pro Gly Gly Lys
                85                      90                      95
Arg Leu Leu Gln Thr Pro Gly Phe Leu Gly Leu Gln Ser Ser Lys Ala
            100                     105                     110
Pro Ala Gly Ser Ser Leu Thr Ile Trp Thr Gln Gln Ser Gln Gly Gly
```

```
                 115                  120 ·                  125
Pro Gly Thr Ala Gly Glu Leu Ala Ala Pro Ser
    130                  135                  139
```

```
        <210> 1082
        <211> 1105
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(1105)
        <223> X = any amino acid or stop code
```

```
        <400> 1082
Glu Lys Asn Ala Leu Glu Pro Thr Val Tyr Phe Gly Met Gly Val Xaa
 1               5                  10                  15
Ala Pro Gln Val Pro Arg Phe Gln Gln Arg Ile Thr Gly Tyr Gln Tyr
             20                  25                  30
Tyr Leu Gln Leu Arg Lys Asp Ile Trp Glu Glu Gly Ile Pro Cys Thr
         35                  40                  45
Leu Glu Gln Pro Ile His Leu Ala Gly Leu Ala Val Gln Ala Ile Phe
     50                  55                  60
Gly Asp Phe Asp Gln Tyr Glu Ser Gln Asp Phe Leu Gln Lys Phe Ala
 65              70                  75                  80
Leu Phe Pro Val Gly Trp Leu Gln Asp Glu Lys Val Leu Glu Glu Ala
             85                  90                  95
Thr Gln Lys Val Ala Leu Leu His Gln Lys Tyr Arg Gly Leu Thr Ala
         100                 105                 110
Pro Asp Ala Glu Met Leu Tyr Met Gln Glu Val Glu Arg Met Asp Gly
         115                 120                 125
Tyr Gly Glu Glu Ser Tyr Pro Ala Lys Asp Ser Gln Gly Ser Asp Ile
     130                 135                 140
Ser Ile Gly Ala Cys Leu Glu Gly Ile Phe Val Lys His Lys Asn Gly
145                 150                 155                 160
Arg His Pro Val Val Phe Arg Trp His Asp Ile Ala Asn Met Ser His
             165                 170                 175
Asn Lys Ser Phe Phe Ala Leu Glu Leu Ala Asn Lys Glu Glu Thr Ile
             180                 185                 190
Gln Phe Gln Thr Glu Asp Met Glu Thr Ala Lys Tyr Ile Trp Arg Leu
         195                 200                 205
Cys Val Ala Arg His Lys Phe Tyr Arg Leu Asn Gln Cys Asn Leu Gln
     210                 215                 220
Thr Gln Thr Val Thr Val Asn Pro Ile Arg Arg Arg Ser Ser Ser Arg
225                 230                 235                 240
Met Ser Leu Pro Lys Pro Gln Pro Tyr Val Met Pro Pro Pro Gln
             245                 250                 255
Leu His Tyr Asn Gly His Tyr Thr Glu Pro Tyr Ala Ser Ser Gln Asp
             260                 265                 270
Asn Leu Phe Val Pro Asn Gln Glu Gly Tyr Tyr Gly Gln Phe Gln Thr
             275                 280                 285
Ser Leu Asn Arg Ala Gln Ile Asp Phe Asn Gly Arg Ile Arg Asn Ala
     290                 295                 300
Ser Val Tyr Ser Ala His Ser Thr Asn Ser Leu Asn Asn Pro Gln Pro
305                 310                 315                 320
Tyr Leu Gln Pro Ser Pro Met Ser Ser Asn Pro Ser Ile Thr Gly Ser
             325                 330                 335
Asp Val Met Arg Pro Asp Tyr Leu Pro Ser His Arg His Ser Ala Val
             340                 345                 350
```

```
Ile Pro Pro Ser Tyr Arg Pro Thr Pro Asp Tyr Glu Thr Val Met Lys
        355             360             365
Gln Leu Asn Arg Gly Leu Val His Ala Glu Arg Gln Ser His Ser Leu
    370             375             380
Arg Asn Leu Asn Ile Gly Ser Ser Tyr Ala Tyr Ser Arg Pro Ala Ala
385             390             .   395                     400
Leu Val Tyr Ser Gln Pro Glu Ile Arg Glu His Ala Gln Leu Pro Ser
            405             410                     415
Pro Ala Ala Ala His Cys Pro Phe Ser Leu Ser Tyr Ser Phe His Ser
        420             425             .   430
Pro Ser Pro Tyr Pro Tyr Pro Ala Glu Arg Arg Pro Val Val Gly Ala
        435             440             445
Val Ser Val Pro Glu Leu Thr Asn Ala Gln Leu Gln Ala Gln Asp Tyr
    450             455             460
Pro Ser Pro Asn Ile Met Arg Thr Gln Val Tyr Arg Pro Pro Pro Pro
465             470         .       475                     480
Tyr Pro Pro Pro Arg Pro Ala Asn Ser Thr Pro Asp Leu Ser Arg His
            485             490         .       495
Leu Tyr Ile Ser Ser Ser Asn Pro Asp Leu Ile Thr Arg Arg Val His
            500             505             510
His Ser Val Gln Thr Phe Gln Glu Asp Ser Leu Pro Val Ala His Ser
        515             520             525
Leu Gln Glu Val Ser Glu Pro Leu Thr Ala Ala Arg His Ala Gln Leu
    530     .           535             540
His Lys Arg Asn Ser Ile Glu Val Ala Gly Leu Ser His Gly Leu Glu
545             550             555             560
Gly Leu Arg Leu Lys Glu Arg Thr Leu Ser Ala Ser Ala Ala Glu Val
            565             570             575
Ala Pro Arg Ala Val Ser Val Gly Ser Gln Pro Ser Val Phe Thr Glu
        580             585             .   590
Arg Thr Gln Arg Glu Gly Pro Glu Glu Ala Glu Gly Leu Arg Tyr Gly
    595             600             605
His Lys Lys Ser Leu Ser Asp Ala Thr Met Leu Ile His Ser Ser Glu
    610             615             620
Glu Glu Glu Asp Glu Asp Phe Glu Glu Glu Ser Gly Ala Arg Ala Pro
625             630             635                     640
Pro Ala Arg Ala Arg Glu Pro Arg Pro Gly Leu Ala Gln Asp Pro Pro
            645             650             655
Gly Cys Pro Arg Val Leu Leu Ala Gly Pro Leu His Ile Leu Glu Pro
            660             665             670
Lys Ala His Val Pro Asp Ala Glu Lys Arg Met Met Asp Ser Ser Pro
    675         .           680             685
Val Arg Thr Thr Ala Glu Ala Gln Arg Pro Trp Arg Asp Gly Leu Leu
    690             695             700
Met Pro Ser Met Ser Glu Ser Asp Leu Thr Thr Ser Gly Arg Tyr Arg
705             710             715                     720
Ala Arg Arg Asp Ser Leu Lys Lys Arg Pro Val Ser Asp Leu Leu Ser
            725             730             735
Gly Lys Lys Asn Ile Val Glu Gly Leu Pro Pro Leu Gly Gly Met Lys
            740             745             750
Lys Thr Arg Val Asp Ala Lys Lys Ile Gly Pro Leu Lys Leu Ala Ala
    755             760             765
Leu Asn Gly Leu Ser Leu Ser Arg Val Pro Leu Pro Asp Glu Gly Lys
    770             775             780
Glu Val Ala Thr Arg Ala Thr Asn Asp Glu Arg Cys Lys Ile Leu Glu
785             790             795                     800
Gln Arg Leu Glu Gln Gly Met Val Phe Thr Glu Tyr Glu Arg Ile Leu
            805             810             815
Lys Lys Arg Leu Val Asp Gly Glu Cys Ser Thr Ala Arg Leu Pro Glu
            820             825             830
Asn Ala Glu Arg Asn Arg Phe Gln Asp Val Leu Pro Tyr Asp Asp Val
        835             840             845
Arg Val Glu Leu Val Pro Thr Lys Glu Asn Asn Thr Gly Tyr Ile Asn
    850             855             860
```

602

```
Ala Ser His Ile Lys Val Ser Val Ser Gly Ile Glu Trp Asp Tyr Ile
865             870                 875                         880
Ala Thr Gln Gly Pro Leu Gln Asn Thr Cys Gln Asp Phe Trp Gln Met
                885                 890                 895
Val Trp Glu Gln Gly Ile Ala Ile Ile Ala Met Val Thr Ala Glu Glu
        900                 905                 910
Glu Gly Gly Arg Glu Lys Ser Phe Arg Tyr Trp Pro Arg Leu Gly Ser
        915                 920                 925
Arg His Asn Thr Val Thr Tyr Gly Arg Phe Lys Ile Thr Thr Arg Phe
        930                 935                 940
Arg Thr Asp Ser Gly Cys Tyr Ala Thr Thr Gly Leu Lys Met Lys His
945                 950                 955                     960
Leu Leu Thr Gly Gln Glu Arg Thr Val Trp His Leu Gln Tyr Thr Asp
                965                 970                 975
Trp Pro Glu His Gly Cys Pro Glu Asp Leu Lys Gly Phe Leu Ser Tyr
            980                 985                 990
Leu Glu Glu Ile Gln Ser Val Arg Arg His Thr Asn Ser Thr Ser Asp
        995                 1000                1005
Pro Gln Ser Pro Asn Pro Pro Leu Leu Val His Cys Ser Ala Gly Val
    1010                1015                1020
Gly Arg Thr Gly Val Val Ile Leu Ser Glu Ile Met Ile Ala Cys Leu
1025                1030                1035                    1040
Glu His Asn Glu Val Leu Asp Ile Pro Arg Val Leu Asp Met Leu Arg
                1045                1050                1055
Gln Gln Arg Met Met Leu Val Gln Thr Leu Cys Gln Tyr Thr Phe Val
                1060                1065                1070
Tyr Arg Val Leu Ile Gln Val Pro Glu Lys Ala Pro Arg Leu Ile Leu
        1075                1080                1085
Ser Ser Pro Gln Phe Pro Tyr Gly Ala Gln Ser Cys Glu Ala Phe Thr
    1090                1095                1100
Ala
1105
```

```
<210> 1083
<211> 99
<212>Amino acid
<213> Homo sapiens

<220>.
<221> misc_feature
<222> (1)...(99)
<223> X = any amino acid or stop code
```

```
<400> 1083
Arg Lys Lys Gln Lys Leu Ala Glu Glu Xaa Val Glu Leu Ser Lys Leu
1               5                   10                  15
Ala Asp Leu Lys Asp Ala Glu Ala Val Gln Lys Phe Phe Leu Glu Glu
            20                  25                  30
Ile Xaa Leu Gly Glu Glu Ile Leu Ala Lys Gly Val Asp His Leu Thr
        35                  40                  45
Asn Pro Ser Ala Val Cys Gly Gln Pro Gln Trp Leu Leu Gln Val Leu
    50                  55                  60
Gln Gln Thr Leu Pro Leu Pro Val Ile Gln Met Leu Leu Thr Lys Pro
65                  70                  75                  80
Leu Pro Val Asn Gln Arg Leu Val Ser Ala Gly Ser Leu Ala Lys Asp
                85                  90                  95
Asp Val Glu
        99
```

```
        <210> 1084
        <211> 206
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(206)
        <223> X = any amino acid or stop code
```

```
        <400> 1084
Ser Phe Cys Leu His Glu Phe Gly Trp Leu Gly Ser Ser Pro Gln Ser
 1               5                  10                  15
Asp His Pro Val Pro Ala Leu Leu Gly Leu Gly Ala Phe Val His His
            20                  25                  30
Ser Leu Leu Gln Val His Ser Ser Pro Gly Ala Gly Pro Val Ser Phe
        35                  40                  45
Leu Phe Leu Gly Glu Ser Cys Ser Pro Val Asp Glu Pro Arg Cys Val
    50                  55                  60
Pro Ser Cys Ala Phe Gly Phe Leu Ser Cys Phe Pro Leu Leu Asn Ser
65                  70                  75                  80
Ala Ala Leu Glu Arg Gly Leu Phe Phe Phe Val Val Phe Phe Phe Leu
                85                  90                  95
Glu Ser Gly Ser Cys Gln Val Ala Arg Ala Gly Val Arg Asp Arg Asp
            100                 105                 110
Arg Gly Ser Leu Gln Pro Pro Pro Gly Leu Lys Gln Phe Cys Leu
            115                 120                 125
Ser Leu Pro Ser Arg Trp Asp His Arg His Pro Pro Pro Leu Arg Val
        130                 135                 140
Pro Xaa Phe Val Phe Val Phe Leu Val Glu Leu Gly Phe His His Val
145                 150                 155                 160
Ala Gln Ala Gly Leu Lys Leu Leu Thr Leu Ser Asp Pro Pro Ala Pro
                165                 170                 175
Ala Ser His Ser Ala Gly Ile Thr Gly Val Ser Gln Arg Asp Gln Pro
            180                 185                 190
Val Leu Phe Leu Arg Trp Ala Ser Cys Ser Glu Leu Val Gly
            195                 200                 205 206
```

```
        <210> 1085
        <211> 99
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1085
Glu Gly Phe Pro Gly Arg Ser Leu Ser Gly Gly Leu Cys Cys Arg Leu
 1               5                  10                  15
Arg Arg Arg Phe Pro Ile Asp Gly Tyr Arg Pro Arg Arg Arg Arg Arg
            20                  25                  30
Trp Ser Cys Cys Pro Ser Gly Val Arg Pro Val Arg Arg Met Ser Gln
        35                  40                  45
Lys Ser Trp Ile Glu Ser Thr Leu Thr Lys Arg Glu Cys Val Tyr Ile
    50                  55                  60
Ile Pro Ser Ser Lys Asp Pro His Arg Cys Leu Pro Gly Cys Gln Ile
    65                  70                  75                  80
```

```
Cys Gln Gln Leu Val Arg Arg Gly Phe Thr Val Leu Ala Arg Met Val
                85                  90                  95
Ser Ile Ser
        99


        <210> 1086
        <211> 53
        <212>Amino acid
        <213> Homo sapiens




        <400> 1086
Gln Asn Ser Thr Cys Leu Thr Ala Gln Thr His Ser Leu Leu Gln His
1               5                  10                  15
Gln Pro Leu Gln Leu Thr Thr Leu Leu Asp Gln Tyr Ile Arg Glu Gln
            20                  25                  30
Arg Glu Lys Asp Ser Val Met Ser Ala Asn Gly Lys Pro Asp Pro Asp
        35                  40                  45
Thr Val Pro Asp Ser
        50          53


        <210> 1087
        <211> 250
        <212>Amino acid
        <213> Homo sapiens




        <400> 1087
Leu Asn Pro Trp Lys Asn Ala Leu Gln Asp Phe Cys Leu Pro Phe Leu
1               5                  10                  15
Arg Ile Thr Ser Leu Leu Gln His His Leu Phe Gly Glu Asp Leu Pro
            20                  25                  30
Ser Cys Gln Glu Glu Glu Phe Ser Val Leu Ala Ser Cys Leu Gly
      35                  40                  45
Leu Leu Pro Thr Phe Tyr Gln Thr Glu His Pro Phe Ile Ser Ala Ser
    50                  55                  60
Cys Leu Asp Trp Pro Val Pro Ala Phe Asp Ile Ile Thr His Trp Cys
65                  70                  75                  80
Phe Glu Ile Lys Ser Phe Thr Glu Arg His Ala Glu Gln Gly Lys Ala
                85                  90                  95
Leu Leu Ile Gln Glu Ser Lys Trp Lys Leu Pro His Leu Leu Gln Leu
            100                 105                 110
Pro Glu Asn Tyr Asn Thr Ile Phe Gln Tyr Tyr His Arg Lys Thr Cys
            115                 120                 125
Ser Val Cys Thr Lys Val Pro Lys Asp Pro Ala Val Cys Leu Val Cys
        130                 135                 140
Gly Thr Phe Val Cys Leu Lys Gly Leu Cys Cys Lys Gln Gln Ser Tyr
145                 150                 155                 160
Cys Glu Cys Val Leu His Ser Gln Asn Cys Gly Ala Gly Thr Gly Ile
            165                 170                 175
Phe Leu Leu Ile Asn Ala Ser Val Ile Ile Ile Arg Gly His Arg
            180                 185                 190
Phe Cys Leu Trp Gly Ser Val Tyr Leu Asp Ala His Gly Glu Glu Asp
        195                 200                 205
Arg Asp Leu Arg Arg Gly Lys Pro Leu Tyr Ile Cys Lys Glu Arg Tyr
    210                 215                 220
```

```
Lys Val Leu Glu Gln Gln Trp Ile Ser His Thr Phe Asp His Ile Asn
225                 230             235                 240
Lys Arg Trp Gly Pro His Tyr Asn Gly Leu
                245             250



        <210> 1088
        <211> 455
        <212>Amino acid
        <213> Homo sapiens




        <400> 1088
Lys Gly Gln Leu Val Asn Leu Leu Pro Pro Glu Asn Phe Pro Trp Cys
1                 5                 10                15
Gly Gly Ser Gln Gly Pro Arg Met Leu Arg Thr Cys Tyr Val Leu Cys
            20              25              30
Ser Gln Ala Gly Pro Arg Ser Arg Gly Trp Gln Ser Leu Ser Phe Asp
        35              40              45
Gly Gly Ala Phe His Leu Lys Gly Thr Gly Glu Leu Thr Arg Ala Leu
        50              55              60
Leu Val Leu Arg Leu Cys Ala Trp Pro Pro Leu Val Thr His Gly Leu
65              70              75              80
Leu Leu Gln Ala Trp Ser Arg Arg Leu Leu Gly Ser Arg Leu Ser Gly
            85              90              95
Ala Phe Leu Arg Ala Ser Val Tyr Gly Gln Phe Val Ala Gly Glu Thr
        100             105             110
Ala Glu Glu Val Lys Gly Cys Val Gln Gln Leu Arg Thr Leu Ser Leu
        115             120             125
Arg Pro Leu Leu Ala Val Pro Thr Glu Glu Glu Pro Asp Ser Ala Ala
        130             135             140
Lys Ser Gly Glu Ala Trp Tyr Glu Gly Asn Leu Gly Ala Met Leu Arg
145             150             155             160
Cys Val Asp Leu Ser Arg Gly Leu Leu Glu Pro Pro Ser Leu Ala Glu
            165             170             175
Ala Ser Leu Met Gln Leu Lys Val Thr Ala Leu Thr Ser Thr Arg Leu
            180             185             190
Cys Lys Glu Leu Ala Ser Trp Val Arg Arg Pro Gly Ala Ser Leu Glu
            195             200             205
Leu Ser Pro Glu Arg Leu Ala Glu Ala Met Asp Ser Gly Gln Asn Leu
    210             215             220
Gln Val Ser Cys Leu Asn Ala Glu Gln Asn Gln His Leu Arg Ala Ser
225             230             235             240
Leu Ser Arg Leu His Arg Val Ala Gln Tyr Ala Arg Ala Gln His Val
            245             250             255
Arg Leu Leu Val Asp Ala Glu Tyr Thr Ser Leu Asn Pro Ala Leu Ser
            260             265             270
Leu Leu Val Ala Ala Leu Ala Val Arg Trp Asn Ser Pro Gly Glu Gly
    275             280             285
Gly Pro Trp Val Trp Asn Thr Tyr Gln Ala Cys Leu Lys Asp Thr Phe
    290             295             300
Glu Arg Leu Gly Arg Asp Ala Glu Ala Ala His Arg Ala Gly Leu Ala
305             310             315             320
Phe Gly Val Lys Leu Val Arg Gly Ala Tyr Leu Asp Lys Glu Arg Ala
            325             330             335
Val Ala Gln Leu His Gly Met Glu Asp Pro Pro Thr Gln Ala Asp Tyr
            340             345             350
Glu Ala Thr Ser Gln Ser Tyr Ser Arg Cys Leu Glu Leu Met Leu Thr
    355             360             365
His Val Ala Arg His Gly Pro Met Cys His Leu Met Val Ala Ser His
    370             375             380
```

```
Asn Glu Glu Ser Val Arg Gln Ala Thr Lys Gly Gln Ala Gly Tyr Val
385                 390                 395                 400
Val Tyr Lys Ser Ile Pro Tyr Gly Ser Leu Glu Glu Val Ile Pro Tyr
                405                 410                 415
Leu Ile Arg Arg Ala Gln Glu Asn Arg Ser Val Leu Gln Gly Ala Arg
            420                 425                 430
Arg Glu Gln Glu Leu Leu Ser Gln Lys Leu Trp Arg Arg Leu Leu Pro
        435                 440                 445
Gly Cys Arg Arg Ile Pro His
        450                 455
```

```
<210> 1089
<211> 243
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(243)
<223> X = any amino acid or stop code
```

```
<400> 1089
Val Val Glu Phe Gly Glu Met Ser Thr Ala Arg Ala Pro Glu Gly Leu
1               5                   10                  15
Arg Trp Phe Gln Leu Tyr Val His Pro Asp Leu Gln Leu Asn Lys Gln
            20                  25                  30
Leu Ile Gln Arg Val Glu Ser Leu Gly Phe Lys Ala Leu Val Ile Thr
            35                  40                  45
Leu Asp Thr Pro Val Cys Gly Asn Arg Arg His Asp Ile Arg Asn Gln
    50                  55                  60
Leu Arg Arg Asn Leu Thr Leu Thr Asp Leu Gln Ser Pro Lys Lys Gly
65                  70                  75                  80
Asn Ala Ile Pro Tyr Phe Gln Met Thr Pro Ile Ser Thr Ser Leu Cys
                85                  90                  95
Trp Asn Asp Leu Ser Trp Phe Gln Ser Ile Thr Arg Leu Pro Ile Ile
            100                 105                 110
Leu Lys Gly Ile Leu Thr Lys Glu Asp Ala Glu Leu Ala Val Lys His
        115                 120                 125
Asn Val Gln Gly Ile Ile Val Ser Asn His Gly Gly Arg Gln Leu Asp
    130                 135                 140
Glu Val Leu Ala Ser Ile Asp Ala Leu Thr Glu Val Gly Ala Ala Glu
145                 150                 155                 160
Xaa Gly Asn Met Lys Tyr Tyr Leu Asp Ala Gly Val Arg Thr Gly Asn
                165                 170                 175
Asp Val Gln Lys Ala Leu Ala Leu Gly Ala Lys Cys Ile Phe Leu Gly
            180                 185                 190
Arg Pro Ile Leu Trp Gly Leu Ala Cys Lys Gly Glu His Gly Val Lys
        195                 200                 205
Glu Val Leu Asn Ile Leu Thr Asn Glu Phe His Thr Ser Met Ala Leu
    210                 215                 220
Thr Gly Cys Arg Ser Val Ala Glu Ile Asn Arg Asn Leu Val Gln Phe
225                 230                 235                 240
Ser Arg Leu
        243
```

```
<210> 1090
<211> 90
<212>Amino acid
```

```
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(90)
    <223> X = any amino acid or stop code




    <400> 1090
Phe Phe Leu Arg Trp Ser Phe Thr Leu Leu Pro Arg Leu Glu Cys Gln
 1               5                  10                  15
Trp Leu Asn Leu Gly Ser Leu Gln Pro Pro Pro Pro Gly Phe Lys Xaa
            20                  25                  30
Ser Ser Cys Leu Arg Leu Leu Ser Ser Trp Gly Leu Gln Val Pro Thr
        35                  40                  45
Ser Met Leu Gly Xaa Phe Phe Cys Ile Phe Ser Arg Glu Gly Ile Ser
    50                  55                  60
Pro Cys Trp Pro Gly Trp Ser Gln Thr Pro Lys Val Ile His Leu Pro
65                  70                  75                  80
Arg Pro Pro Arg Val Leu Arg Leu Gln Ala
                85                  90



    <210> 1091
    <211> 259
    <212>Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(259)
    <223> X = any amino acid or stop code




    <400> 1091
Leu Leu Cys Phe Val His Thr Ala Leu Gln Ser Phe Gln Gly Glu Leu
 1               5                  10                  15
Tyr Glu Pro His Val Val Ile Ala Ile Val Val Phe Leu Val Lys Leu
            20                  25                  30
Gly Ile Cys Lys Xaa Arg Ala Ser Trp Arg Lys Lys Val Thr Leu Val
        35                  40                  45
Val Lys Xaa Ser Leu Lys Ile Cys Phe Thr Lys Tyr Gly Ser Cys Tyr
    50                  55                  60
His Pro Gly Glu Lys Ser Ser Ser Trp Leu Phe Asn Xaa Arg Met Val
65                  70                  75                  80
Asn Asp Cys Leu Ala Thr Ser Cys Ser Asn Arg Ser Phe Val Ile Gln
                85                  90                  95
Gln Ile Pro Ser Ser Asn Leu Phe Met Val Val Val Asp Ser Ser Cys
            100                 105                 110
Leu Cys Glu Ser Val Ala Pro Ile Thr Met Ala Pro Ile Glu Ile Arg
        115                 120                 125
Tyr Ile Leu Leu Cys Ala Gly Pro Leu Thr Thr Thr Glu Thr Ser Lys
    130                 135                 140
Gly Tyr Gln Trp Xaa Gly Asn Leu Gly Glu Lys Tyr Xaa Arg Arg Lys
145                 150                 155                 160
Ile Thr Ser Phe Pro Leu Leu Glu Arg Glu Ser Ser Xaa Glu Ser Cys
                165                 170                 175
His Cys Gln Ile Leu Thr Ser Glu Met Gln Ser Arg Lys Lys Gln Ser
```

```
              180                    .185                    190
Leu Glu Thr Cys Leu Asn Tyr Ser Gln His Asn Glu Ser Leu Lys Cys
        195                    200                    205
Glu Arg Leu Lys Ala Gln Lys Ile Arg Arg Arg Pro Glu Ser Cys His
    210                    215                    220
Gly Phe His Pro Glu Glu Asn Ala Arg Glu Cys Gly Gly Ala Pro Ser
225                    230                    235                    240
Leu Gln Ala Gln Thr Val Leu Leu Leu Leu Pro Leu Leu Leu Met Leu
                245                    250                    255
Phe Ser Arg
        259
```

```
        <210> 1092
        <211> 117
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(117)
        <223> X = any amino acid or stop code
```

```
        <400> 1092
Val Pro Ser Pro Thr His Asp Pro Lys Pro Ala Glu Ala Pro Met Pro
1               5                    10                    15
Ala Xaa Pro Ala Pro Pro Gly Pro Ala Ser Pro Gly Gly Ala Leu Glu
            20                    25                    30
Pro Pro Ala Ala Ala Arg Ala Gly Gly Ser Pro Thr Ala Val Arg Ser
        35                    40                    45
Ile Leu Thr Lys Glu Arg Arg Pro Glu Gly Gly Tyr Lys Ala Val Trp
    50                    55                    60
Phe Gly Glu Asp Ile Gly Thr Glu Ala Asp Val Val Val Leu Asn Ala
65                    70                    75                    80
Pro Thr Leu Asp Val Asp Gly Ala Ser Asp Ser Gly Ser Gly Asp Glu
                85                    90                    95
Gly Glu Gly Ala Gly Arg Gly Gly Gly Pro Tyr Asp Ala Pro Gly Gly
            100                    105                    110
Asp Asp Ser Tyr Ile
        115        117
```

```
        <210> 1093
        <211> 763
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1093
Leu Ile Ser Leu Ala Gly Pro Thr Asp Asp Ile Gln Ser Thr Gly Pro
1               5                    10                    15
Gln Val His Ala Leu Asn Ile Leu Arg Ala Leu Phe Arg Asp Thr Arg
            20                    25                    30
Leu Gly Glu Asn Ile Ile Pro Tyr Val Ala Asp Gly Ala Lys Ala Ala
        35                    40                    45
Ile Leu Gly Phe Thr Ser Pro Val Trp Ala Val Arg Asn Ser Ser Thr
    50                    55                    60
```

Leu Leu Phe Ser Ala Leu Ile Thr Arg Ile Phe Gly Val Lys Arg Ala
65   70   75   80
Lys Asp Glu His Ser Lys Thr Asn Arg Met Thr Gly Arg Glu Phe Phe
              85   90   95
Ser Arg Phe Pro Glu Leu Tyr Pro Phe Leu Leu Lys Gln Leu Glu Thr
             100   105   110
Val Ala Asn Thr Val Asp Ser Asp Met Gly Glu Pro Asn Arg His Pro
             115   120   125
Ser Met Phe Leu Leu Leu Leu Val Leu Glu Arg Leu Tyr Ala Ser Pro
        130   135   140
Met Asp Gly Thr Ser Ser Ala Leu Ser Met Gly Pro Phe Val Pro Phe
145   150   155   160
Ile Met Arg Cys Gly His Ser Pro Val Tyr His Ser Arg Glu Met Ala
             165   170   175
Ala Arg Ala Leu Val Pro Phe Val Met Ile Asp His Ile Pro Asn Thr
             180   185   190
Ile Arg Thr Leu Leu Ser Thr Leu Pro Ser Cys Thr Asp Gln Cys Phe
         195   200   205
Arg Gln Asn His Ile His Gly Thr Leu Leu Gln Val Phe His Leu Val
    210   215   220
Gln Ala Tyr Ser Asp Ser Lys His Gly Thr Asn Ser Asp Phe Gln His
225   230   235   240
Glu Leu Thr Asp Ile Thr Val Cys Thr Lys Ala Lys Leu Trp Leu Ala
             245   250   255
Lys Arg Gln Asn Pro Cys Leu Val Thr Arg Ala Val Tyr Ile Asp Ile
             260   265   270
Leu Phe Leu Leu Thr Cys Cys Leu Asn Arg Ser Ala Lys Asp Asn Gln
         275   280   285
Pro Val Leu Glu Ser Leu Gly Phe Trp Glu Glu Val Arg Gly Ile Ile
    290   295   300
Ser Gly Ser Glu Leu Ile Thr Gly Phe Pro Trp Ala Phe Lys Val Pro
305   310   315   320
Gly Leu Pro Gln Tyr Leu Gln Ser Leu Thr Arg Leu Ala Ile Ala Ala
             325   330   335
Val Trp Ala Ala Ala Ala Lys Ser Gly Glu Arg Glu Thr Asn Val Pro
             340   345   350
Ile Ser Phe Ser Gln Leu Leu Glu Ser Ala Phe Pro Glu Val Arg Ser
             355   360   365
Leu Thr Leu Glu Ala Leu Leu Glu Lys Phe Leu Ala Ala Ala Ser Gly
    370   375   380
Leu Gly Glu Lys Gly Val Pro Pro Leu Leu Cys Asn Met Gly Glu Lys
385   390   395   400
Phe Leu Leu Leu Ala Met Lys Glu Asn His Pro Glu Cys Phe Cys Lys
             405   410   415
Ile Leu Lys Ile Leu His Cys Met Asp Pro Gly Glu Trp Leu Pro Gln
             420   425   430
Thr Glu His Cys Val His Leu Thr Pro Lys Glu Phe Leu Ile Trp Thr
         435   440   445
Met Asp Ile Ala Ser Asn Glu Arg Ser Glu Ile Gln Ser Val Ala Leu
    450   455   460
Arg Leu Ala Ser Lys Val Ile Ser His His Met Gln Thr Cys Val Glu
465   470   475   480
Asn Arg Glu Leu Ile Ala Ala Glu Leu Lys Gln Trp Val Gln Leu Val
             485   490   495
Ile Leu Ser Cys Glu Asp His Leu Pro Thr Glu Ser Arg Leu Ala Val
         500   505   510
Val Glu Val Leu Thr Ser Thr Thr Pro Leu Phe Leu Thr Asn Pro His
    515   520   525
Pro Ile Leu Glu Leu Gln Asp Thr Leu Ala Leu Trp Lys Cys Val Leu
    530   535   540
Thr Leu Leu Gln Ser Glu Glu Gln Ala Val Arg Asp Ala Ala Thr Glu
545   550   555   560
Thr Val Thr Thr Ala Met Ser Gln Glu Asn Thr Cys Gln Ser Thr Glu
             565   570   575

610

```
Phe Ala Phe Cys Gln Val Asp Ala Ser Ile Ala Leu Ala Leu Ala Leu
            580                 585                 590
Ala Val Leu Cys Asp Leu Leu Gln Gln Trp Asp Gln Leu Ala Pro Gly
            595                 600                 605
Leu Pro Ile Leu Leu Gly Trp Leu Leu Gly Glu Ser Asp Asp Leu Val
            610                 615                 620
Ala Cys Val Glu Ser Met His Gln Val Glu Glu Asp Tyr Leu Phe Glu
625                 630                 635                     640
Lys Ala Glu Val Asn Phe Trp Ala Glu Thr Leu Ile Phe Val Lys Tyr
                645                 650                     655
Leu Cys Lys His Leu Phe Cys Leu Leu Ser Lys Ser Gly Trp Arg Pro
            660                 665                 670
Pro Ser Pro Glu Met Leu Cys His Leu Gln Arg Met Val Ser Glu Gln
            675                 680                 685
Cys His Leu Leu Ser Gln Phe Phe Arg Glu Leu Pro Pro Ala Ala Glu
            690                 695                 700
Phe Val Lys Thr Val Glu Phe Thr Arg Leu Arg Ile Gln Glu Glu Arg
705                 710                 715                     720
Thr Leu Ala Cys Leu Arg Leu Leu Ala Phe Leu Glu Gly Lys Glu Gly
                725                 730                     735
Glu Asp Thr Leu Val Leu Ser Val Trp Asp Ser Tyr Ala Glu Ser Arg
            740                 745                 750
Gln Leu Thr Leu Pro Arg Thr Glu Ala Ala Cys
            755                 760         763
```

```
<210> 1094
<211> 413
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1094
His Ala Phe Arg Pro Ile Ala Leu Gln Arg Gly Val Ser Phe Arg Gly
1             5                 10                  15
Cys Ser Asn Gln Tyr Ala Glu Ser Arg Arg Leu Gln Gly Glu Ser Gly
            20                 25                  30
Ser Arg Ala Phe Ala His Leu Met Glu Ser Leu Leu Gln His Leu Asp
        35                 40                  45
Arg Phe Ser Glu Leu Leu Ala Val Ser Ser Thr Thr Tyr Val Ser Thr
    50                 55                 60
Trp Asp Pro Ala Thr Val Arg Arg Ala Leu Gln Trp Ala Arg Tyr Leu
65                 70                 75                      80
Arg His Ile His Arg Arg Phe Gly Arg His Gly Pro Ile Arg Thr Ala
                85                 90                  95
Leu Glu Arg Arg Leu His Asn Gln Trp Arg Gln Glu Gly Gly Phe Gly
            100                105                 110
Arg Gly Pro Val Pro Gly Leu Ala Asn Phe Gln Ala Leu Gly His Cys
        115                120                 125
Asp Val Leu Leu Ser Leu Arg Leu Leu Glu Asn Arg Ala Leu Gly Asp
    130                135                 140
Ala Ala Arg Tyr His Leu Val Gln Gln Leu Phe Pro Gly Pro Gly Val
145                 150                 155                  160
Arg Asp Ala Asp Glu Glu Thr Leu Gln Glu Ser Leu Ala Arg Leu Ala
                165                170                 175
Arg Arg Arg Ser Ala Val His Met Leu Arg Phe Asn Gly Tyr Arg Glu
            180                185                 190
Asn Pro Asn Leu Gln Glu Asp Ser Leu Met Lys Thr Gln Ala Glu Leu
        195                200                 205
Leu Leu Glu Arg Leu Gln Glu Val Gly Lys Ala Glu Ala Glu Arg Pro
    210                215                 220
```

```
Ala Arg Phe Leu Ser Ser Leu Trp Glu Arg Leu Pro Gln Asn Asn Phe
225                 230                 235                 240
Leu Lys Val Ile Ala Val Ala Leu Leu Gln Pro Pro Leu Ser Arg Arg
                245                 250                 255
Pro Gln Glu Glu Leu Glu Pro Gly Ile His Lys Ser Pro Gly Glu Gly
            260                 265                 270
Ser Gln Val Leu Val His Trp Leu Leu Gly Asn Ser Glu Val Phe Ala
        275                 280                 285
Ala Phe Cys Arg Ala Leu Pro Ala Gly Leu Leu Thr Leu Val Thr Ser
    290                 295                 300
Arg His Pro Ala Leu Ser Pro Val Tyr Leu Gly Leu Leu Thr Asp Trp
305                 310                 315                 320
Gly Gln Arg Leu His Tyr Asp Leu Gln Lys Gly Ile Trp Val Gly Thr
                325                 330                 335
Glu Ser Gln Asp Val Pro Trp Glu Glu Leu His Asn Arg Phe Gln Ser
            340                 345                 350
Leu Cys Gln Ala Pro Pro Pro Leu Lys Asp Lys Val Leu Thr Ala Leu
    355                 360                 365
Glu Thr Cys Lys Ala Gln Asp Gly Asp Phe Glu Glu Pro Gly Leu Ser
    370                 375                 380
Ile Trp Thr Asp Leu Leu Leu Ala Leu Arg Ser Gly Ala Phe Arg Lys
385                 390                 395                 400
Arg Gln Val Leu Gly Leu Ser Ala Gly Leu Ser Ser Val
                405                 410     413
```

```
<210> 1095
<211> 344
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(344)
<223> X = any amino acid or stop code
```

```
    <400> 1095
Ser His Leu Ile Gln His Gln Arg Ile His Thr Xaa Glu Xaa Ala His
1               5                   10                  15
Glu Cys Asn Glu Cys Gly Lys Ala Phe Ser Gln Thr Ser Cys Leu Ile
            20                  25                  30
Gln His His Lys Met His Arg Lys Glu Lys Ser Tyr Glu Cys Asn Glu
        35                  40                  45
Tyr Glu Gly Ser Phe Ser His Ser Ser Asp Leu Ile Leu Gln Gln Glu
    50                  55                  60
Val Leu Thr Arg Gln Lys Ala Phe Asp Cys Asp Val Trp Glu Lys Asn
65                  70                  75                  80
Ser Ser Gln Arg Ala His Leu Val Gln His Gln Ser Ile His Thr Lys
                85                  90                  95
Glu Lys Pro His Glu Cys Asn Glu Asp Gly Lys Ile Phe Asn Gln Ile
            100                 105                 110
Gln Ala Leu Ile Gln His Leu Arg Val His Thr Arg Glu Lys Tyr Val
        115                 120                 125
Cys Thr Ala Cys Gly Lys Ala Phe Ser His Ser Ser Ala Ile Ala Gln
    130                 135                 140
His Gln Ile Ile His Thr Arg Glu Lys Pro Ser Glu Cys Asp Glu Xaa
145                 150                 155                 160
Arg Lys Gly Ile Ser Val Lys Leu Leu Ile Asp Ser Cys Arg Ile Tyr
                165                 170                 175
Thr Ser Glu Lys Ser Tyr Lys Cys Ile Glu Cys Gly Lys Phe Phe Met
```

612

```
                    180                    185                    190
Leu Leu Val Phe Ser Tyr Leu Ser His Ile Trp Arg Ile His Met Gly
        195                    200                    205
Ile Lys Phe His Cys Cys Asn Glu Cys Glu Lys Ala Ile Ser Gln Arg
    210                    215                    220
Asn Tyr Leu Val Xaa Tyr Gln Ile His Ala Met Gln Lys Asp Tyr Lys
225                    230                    235                    240
Cys Asn Glu Ala Cys Met Cys Val Arg Arg Phe Ser His Asn Pro Thr
                245                    250                    255
Leu Ile Gln His Gln Arg Ile Tyr Thr Xaa Glu Asn Leu Phe Gly Cys
                260                    265                    270
Ser Lys Cys Gly Arg Ser Phe Asn Arg Ser Leu Thr Ser Leu Cys His
                275                    280                    285
Ile Arg Ile Ser Ile Arg Arg Gln Glu Phe Asp Val Thr Gln Met Glu
    290                    295                    300
Lys Leu Asp Thr Thr Phe Gln Ala Ser Thr Gln His Arg Asn Asn Gly
305                    310                    315                    320
Glu Lys Ile Val Asp Tyr Leu Phe Met Lys Leu Leu Ile His Ser Pro
                325                    330                    335
Asn Leu Phe His Cys Thr Lys Ile
                340                    344


        <210> 1096
        <211> 76
        <212>Amino acid
        <213> Homo sapiens




        <400> 1096
Ala Val Thr Leu Thr Ala Lys Ile Cys Ser Phe Thr Pro Glu Pro Ser
1                   5                   10                  15
Glu Thr Met Ser Pro Pro Ala Gly Thr Asn Asn Ser Arg His Ala Ala
                20                  25                  30
Leu Arg Ala Val Thr Leu Pro Val Lys Val Cys Ser Phe Thr Pro Glu
        35                  40                  45
Pro Ala Arg Ser Arg Thr His Gln Lys Glu Glu Thr Pro Asn Thr Ser
    50                  55                  60
Glu His Gln Lys Glu Gln Thr Pro Glu Ala Pro Pro
65                  70                  75  76


        <210> 1097
        <211> 1462
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(1462)
        <223> X = any amino acid or stop code




        <400> 1097
Met Ala Tyr Ser Trp Gln Thr Asp Pro Asn Pro Asn Glu Ser His Glu
1                   5                   10                  15
Lys Gln Tyr Glu His Gln Glu Phe Leu Phe Val Asn Gln Pro His Ser
                20                  25                  30
```

```
Ser Ser Gln Val Ser Leu Gly Phe Asp Gln Ile Val Asp Glu Ile Ser
        35                      40                  45
Gly Lys Ile Pro His Tyr Glu Ser Glu Ile Asp Glu Asn Thr Phe Phe
        50                      55                  60
Val Pro Thr Ala Pro Lys Trp Asp Ser Thr Gly His Ser Leu Asn Glu
    65                      70                  75                  80
Ala His Gln Ile Ser Leu Asn Glu Phe Thr Ser Lys Ser Arg Glu Leu
                85                      90                  95
Ser Trp His Gln Val Ser Lys Ala Pro Ala Ile Gly Phe Ser Pro Ser
                100                     105                 110
Val Leu Pro Lys Pro Gln Asn Thr Asn Lys Glu Cys Ser Trp Gly Ser
        115                     120                 125
Pro Ile Gly Lys His His Gly Ala Asp Asp Ser Arg Phe Ser Ile Leu
        130                     135                 140
Ala Pro Ser Phe Thr Ser Leu Asp Lys Ile Asn Leu Glu Lys Glu Leu
145                     150                 155                 160
Glu Asn Glu Asn His Asn Tyr His Ile Gly Phe Glu Ser Ser Ile Pro
                165                     170                 175
Pro Thr Asn Ser Ser Phe Ser Ser Asp Phe Met Pro Lys Glu Glu Asn
                180                     185                 190
Lys Arg Ser Gly His Val Asn Ile Val Glu Pro Ser Leu Met Leu Leu
        195                     200                 205
Lys Gly Ser Leu Gln Pro Gly Met Trp Glu Ser Thr Trp Gln Lys Asn
    210                     215                 220
Ile Glu Ser Ile Gly Cys Ser Ile Gln Leu Val Glu Val Pro Gln Ser
225                     230                 235                 240
Ser Asn Thr Ser Leu Ala Ser Phe Cys Asn Lys Val Lys Lys Ile Arg
                245                     250                 255
Glu Arg Tyr His Ala Ala Asp Val Asn Phe Asn Ser Gly Lys Ile Trp
            260                     265                 270
Ser Thr Thr Thr Ala Phe Pro Tyr Gln Leu Phe Ser Lys Thr Lys Phe
        275                     280                 285
Asn Ile His Ile Phe Ile Asp Asn Ser Thr Gln Pro Leu His Phe Met
    290                     295                 300
Pro Cys Ala Asn Tyr Leu Val Lys Asp Leu Ile Ala Glu Ile Leu His
305                     310                 315                 320
Phe Cys Thr Asn Asp Gln Leu Leu Pro Lys Asp His Ile Leu Ser Val
                325                     330                 335
Trp Gly Ser Glu Glu Phe Leu Gln Asn Asp His Cys Leu Gly Ser His
            340                     345                 350
Lys Met Phe Gln Lys Asp Lys Ser Val Ile Gln Leu His Leu Gln Lys
        355                     360                 365
Ser Arg Glu Ala Pro Gly Lys Leu Ser Arg Lys His Glu Glu Asp His
    370                     375                 380
Ser Gln Phe Tyr Leu Asn Gln Leu Leu Glu Phe Met His Ile Trp Lys
385                     390                 395                 400
Val Ser Arg Gln Cys Leu Leu Thr Leu Ile Arg Lys Tyr Asp Phe His
                405                     410                 415
Leu Lys Tyr Leu Leu Lys Thr Gln Glu Asn Val Tyr Asn Ile Ile Glu
        420                     425                 430
Glu Val Lys Lys Ile Cys Ser Val Leu Gly Cys Val Glu Thr Lys Gln
        435                     440                 445
Ile Thr Asp Ala Val Asn Glu Leu Ser Leu Ile Leu Gln Arg Lys Gly
    450                     455                 460
Glu Asn Phe Tyr Gln Ser Ser Glu Thr Ser Ala Lys Gly Leu Ile Glu
465                     470                 475                 480
Lys Val Thr Thr Glu Leu Ser Thr Ser Ile Tyr Gln Leu Ile Asn Val
                485                     490                 495
Tyr Cys Asn Ser Phe Tyr Ala Asp Phe Gln Pro Val Asn Val Pro Arg
                500                     505                 510
Cys Thr Ser Tyr Leu Asn Pro Gly Leu Pro Ser His Leu Ser Phe Thr
        515                     520                 525
Val Tyr Ala Ala His Asn Ile Pro Glu Thr Trp Val His Arg Ile Asn
    530                     535                 540
```

614

```
Phe Pro Leu Glu Ile Lys Ser Leu Pro Arg Glu Ser Met Leu Thr Val
545             550                 555                 560
Lys Leu Phe Gly Ile Ala Cys Ala Thr Asn Asn Ala Asn Leu Leu Ala
            565                 570                 575
Trp Thr Cys Leu Pro Leu Phe Pro Lys Glu Lys Ser Ile Leu Gly Ser
            580                 585                 590
Met Leu Phe Ser Met Thr Leu Gln Ser Glu Pro Pro Val Glu Met Ile
            595                 600                 605
Thr Pro Gly Val Trp Asp Val Ser Gln Pro Ser Pro Val Thr Leu Gln
    610                 615                 620
Ile Asp Phe Pro Ala Thr Gly Trp Glu Tyr Met Lys Pro Asp Ser Glu
625                 630                 635                 640
Glu Asn Arg Ser Asn Leu Glu Glu Pro Leu Lys Glu Cys Ile Lys His
            645                 650                 655
Ile Ala Arg Leu Ser Gln Lys Gln Thr Pro Leu Leu Leu Ser Glu Glu
            660                 665                 670
Lys Lys Arg Tyr Leu Trp Phe Tyr Arg Phe Tyr Cys Asn Asn Glu Asn
        675                 680                 685
Cys Ser Leu Pro Leu Val Leu Gly Ser Ala Pro Gly Trp Asp Glu Arg
    690                 695                 700
Thr Val Ser Glu Met His Thr Ile Leu Arg Arg Trp Thr Phe Ser Gln
705                 710                 715                 720
Pro Leu Glu Ala Leu Gly Leu Leu Thr Ser Ser Phe Pro Asp Gln Glu
            725                 730                 735
Ile Arg Lys Val Ala Val Gln Gln Leu Asp Asn Leu Leu Asn Asp Glu
            740                 745                 750
Leu Leu Glu Tyr Leu Pro Gln Leu Val Gln Ala Val Lys Phe Glu Trp
        755                 760                 765
Asn Leu Glu Ser Pro Leu Val Gln Leu Leu Leu His Arg Ser Leu Gln
    770                 775                 780
Ser Ile Gln Val Ala His Arg Leu Tyr Trp Leu Leu Lys Asn Ala Glu
785                 790                 795                 800
Asn Glu Ala Tyr Phe Lys Ser Trp Tyr Gln Lys Leu Leu Ala Ala Leu
            805                 810                 815
Gln Phe Cys Ala Gly Lys Ala Leu Asn Asp Glu Phe Ser Lys Glu Gln
        820                 825                 830
Lys Leu Ile Lys Ile Leu Gly Asp Ile Gly Glu Arg Val Lys Ser Ala
        835                 840                 845
Ser Asp His Gln Arg Gln Glu Val Leu Lys Lys Glu Ile Gly Arg Leu
    850                 855                 860
Glu Glu Phe Phe Gln Asp Val Asn Thr Cys His Leu Pro Leu Asn Pro
865                 870                 875                 880
Ala Leu Cys Ile Lys Gly Ile Asp His Asp Ala Cys Ser Tyr Phe Thr
            885                 890                 895
Ser Asn Ala Leu Pro Leu Lys Ile Thr Phe Ile Asn Ala Asn Leu Met
            900                 905                 910
Gly Lys Asn Ile Ser Ile Ile Phe Lys Ala Gly Asp Asp Leu Arg Gln
        915                 920                 925
Asp Met Leu Val Leu Gln Leu Ile Gln Val Met Asp Asn Ile Trp Leu
    930                 935                 940
Gln Glu Gly Leu Asp Met Gln Met Ile Ile Tyr Arg Cys Leu Ser Thr
945                 950                 955                 960
Gly Lys Asp Gln Arg Leu Val Gln Met Val Pro Asp Ala Val Thr Leu
            965                 970                 975
Ala Lys Ile His Arg His Ser Gly Leu Ile Gly Pro Leu Lys Glu Asn
        980                 985                 990
Thr Ile Lys Lys Trp Phe Ser Gln His Asn His Leu Lys Ala Asp Tyr
        995                 1000                1005
Glu Lys Ala Leu Arg Asn Phe Phe Tyr Ser Cys Ala Gly Trp Cys Val
    1010                1015                1020
Val Thr Phe Ile Leu Gly Val Cys Asp Arg His Asn Asp Asn Ile Met
1025                1030                1035                1040
Leu Thr Lys Ser Gly His Met Phe His Ile Asp Phe Gly Lys Phe Leu
            1045                1050                1055
```

                                     615

Gly His Ala Gln Thr Phe Gly Gly Ile Lys Arg Asp Arg Ala Pro Phe
           1060   1065   1070
Ile Phe Thr Ser Glu Met Glu Tyr Phe Ile Thr Glu Gly Gly Lys Asn
      1075   1080   1085
Pro Gln His Phe Gln Asp Phe Val Glu Leu Cys Cys Arg Ala Tyr Asn
   1090   1095   1100
Ile Ile Arg Lys His Ser Gln Leu Leu Leu Asn Leu Leu Glu Met Met
1105   1110   1115   1120
Leu Tyr Ala Gly Leu Pro Glu Leu Ser Gly Ile Gln Asp Leu Lys Tyr
              1125   1130   1135
Val Tyr Asn Asn Leu Arg Pro Gln Asp Thr Asp Leu Glu Ala Thr Ser
           1140   1145   1150
His Phe Thr Lys Lys Ile Lys Glu Ser Leu Glu Cys Phe Pro Val Lys
        1155   1160   1165
Leu Asn Asn Leu Ile His Thr Leu Ala Gln Met Ser Ala Ile Ser Pro
   1170   1175   1180
Ala Lys Ser Thr Ser Gln Thr Phe Pro Gln Glu Ser Cys Leu Leu Ser
1185   1190   1195   1200
Thr Thr Arg Ser Ile Glu Arg Ala Thr Ile Leu Gly Phe Ser Lys Lys
              1205   1210   1215
Ser Ser Asn Leu Tyr Leu Ile Gln Val Thr His Ser Asn Asn Glu Thr
           1220   1225   1230
Ser Leu Thr Glu Lys Ser Phe Glu Gln Phe Ser Lys Leu His Ser Gln
      1235   1240   1245
Leu Gln Lys Gln Phe Ala Ser Leu Thr Leu Pro Glu Phe Pro His Trp
   1250   1255   1260
Trp His Leu Pro Phe Thr Asn Ser Asp His Arg Arg Phe Arg Asp Leu
1265   1270   1275   1280
Asn His Tyr Met Glu Gln Ile Leu Asn Val Ser His Glu Val Thr Asn
              1285   1290   1295
Ser Asp Cys Val Leu Ser Phe Phe Leu Ser Glu Ala Gly Gln Gln Thr
           1300   1305   1310
Val Glu Glu Ser Ser Pro Val Tyr Leu Gly Glu Lys Phe Pro Asp Lys
        1315   1320   1325
Lys Pro Lys Val Gln Leu Val Ile Ser Tyr Glu Asp Val Lys Leu Thr
   1330   1335   1340
Ile Leu Val Lys His Met Lys Asn Ile His Leu Pro Asp Gly Ser Ala
1345   1350   1355   1360
Pro Ser Ala His Val Glu Phe Tyr Leu Leu Pro Tyr Pro Ser Glu Val
              1365   1370   1375
Arg Arg Arg Lys Thr Lys Ser Val Pro Lys Cys Thr Asp Pro Thr Tyr
           1380   1385   1390
Asn Glu Ile Val Val Tyr Asp Glu Val Thr Glu Leu Gln Gly His Val
        1395   1400   1405
Leu Met Leu Ile Val Lys Ser Lys Thr Val Phe Val Gly Ala Ile Asn
   1410   1415   1420
Ile Arg Leu Cys Ser Val Pro Leu Asp Lys Glu Lys Trp Tyr Pro Leu
1425   1430   1435   1440
Gly Asn Ser Ile Ile Xaa Pro Leu Leu Leu Phe Tyr Thr Ser Asn Phe
              1445   1450   1455
Met Gln Ser Val Leu His
        1460   1462

          <210> 1098
          <211> 111
          <212>Amino acid
          <213> Homo sapiens

          <220>
          <221> misc_feature
          <222> (1)...(111)
          <223> X = any amino acid or stop code

```
     <400> 1098
Phe Phe Leu Arg Trp Ser Leu Asp Ser Val Thr Gln Ala Gly Val Gln
1               5                   10                  15
Ser His Asp Leu Ser Ser Leu Gln Pro Pro Pro Pro Gly Phe Lys Gln
            20                  25                  30
Ser Ser Leu Phe Gly Leu Pro Ser Ser Trp Glu Xaa Arg Trp Val Pro
            35                  40                  45
Pro Cys Pro Ala Asn Phe Phe Val Phe Leu Val Glu Thr Gly Phe Arg
    50                  55                  60
His Val Gly Gln Ala Gly Leu Glu Leu Leu Thr Ser Asn Asp Leu Pro
65                  70                  75                  80
Val Ser Ala Cys Gln Ser Ala Gly Ile Thr Gly Val Thr Thr Val Pro
                85                  90                  95
Gln Arg Lys Ser Met Ile Leu Tyr Glu Val Thr Ile Cys Tyr Pro
            100                 105             110 111


     <210> 1099
     <211> 1070
     <212>Amino acid
     <213> Homo sapiens

     <220>
     <221> misc_feature
     <222> (1)...(1070)
     <223> X = any amino acid or stop code




     <400> 1099
Phe Val Arg Glu Ile Arg Gly Pro Ala Val Pro Arg Leu Thr Ser Ala
1               5                   10                  15
Glu Asp Arg His Arg His Gly Pro His Ala His Ser Pro Glu Leu Gln
            20                  25                  30
Arg Thr Gly Arg Asp Tyr Ser Leu Asp Tyr Leu Pro Phe Arg Leu Trp
            35                  40                  45
Val Gly Ile Trp Val Ala Thr Phe Cys Leu Val Leu Val Ala Thr Glu
    50                  55                  60
Ala Ser Val Leu Val Arg Tyr Phe Thr Arg Phe Thr Glu Glu Gly Phe
65                  70                  75                  80
Cys Ala Leu Ile Ser Leu Ile Phe Ile Tyr Asp Ala Val Gly Lys Met
                85                  90                  95
Leu Asn Leu Thr His Thr Tyr Pro Ile Gln Lys Pro Gly Ser Ser Ala
            100                 105                 110
Tyr Gly Cys Leu Cys Gln Tyr Pro Gly Pro Gly Gly Asn Glu Ser Gln
            115                 120                 125
Trp Ile Arg Thr Arg Pro Lys Asp Arg Asp Asp Ile Val Ser Met Asp
    130                 135                 140
Leu Gly Leu Ile Asn Ala Ser Leu Leu Pro Pro Pro Glu Cys Thr Arg
145                 150                 155                 160
Gln Gly Gly His Pro Arg Gly Pro Gly Cys His Thr Val Pro Asp Ile
            165             .       170                 175
Ala Phe Phe Ser Leu Leu Leu Phe Leu Thr Ser Phe Phe Phe Ala Met
            180                 185                 190
Ala Leu Lys Cys Val Lys Thr Ser Arg Phe Phe Pro Ser Val Val Arg
            195                 200                 205
Lys Gly Leu Ser Asp Phe Ser Ser Val Leu Ala Ile Leu Leu Gly Cys
            210                 215                 220
```

617

Gly Leu Asp Ala Phe Leu Gly Leu Ala Thr Pro Lys Leu Met Val Pro
225   230   235   240
Arg Glu Phe Lys Pro Thr Leu Pro Gly Arg Gly Trp Leu Val Ser Pro
            245   250   255
Phe Gly Ala Asn Pro Trp Trp Trp Ser Val Ala Ala Ala Leu Pro Ala
            260   265   270
Leu Leu Leu Ser Ile Leu Ile Phe Met Asp Gln Gln Ile Thr Ala Val
        275   280   285
Ile Leu Asn Arg Met Glu Tyr Arg Leu Gln Lys Gly Ala Gly Phe His
    290   295   300
Leu Asp Leu Phe Trp Val Ala Val Leu Met Leu Leu Thr Ser Ala Leu
305   310   315   320
Gly Leu Pro Trp Tyr Val Ser Ala Thr Val Ile Ser Leu Ala His Met
            325   330   335
Asp Ser Leu Arg Arg Glu Ser Arg Ala Cys Ala Pro Gly Glu Arg Pro
            340   345   350
Asn Phe Leu Gly Ile Arg Glu Gln Arg Leu Thr Gly Leu Val Val Phe
        355   360   365
Ile Leu Thr Gly Ala Ser Ile Phe Leu Ala Pro Val Leu Lys Phe Ile
    370   375   380
Pro Met Pro Val Leu Tyr Gly Ile Phe Leu Tyr Met Gly Val Ala Ala
385   390   ·   395   400
Leu Ser Ser Ile Gln Phe Thr Asn Arg Val Lys Leu Leu Leu Met Pro
            405   410   415
Ala Lys His Gln Pro Asp Leu Leu Leu Leu Arg His Val Pro Leu Thr
        420   425   430
Arg Val His Leu Phe Thr Ala Ile Ser Phe Ala Cys Leu Gly Leu Leu
    · 435   440   445
Trp Ile Ile Lys Ser Thr Pro Ala Ala Ile Ile Phe Pro Leu Met Leu
    450   455   460
Leu Gly Leu Val Gly Val Arg Lys Ala Leu Glu Arg Val Phe Ser Pro
465   470   .475   · 480
Gln Glu Leu Leu Trp Leu Asp Glu Leu Met Pro Glu Glu Glu Arg Ser
            485   490   495
Ile Pro Glu Lys Gly Leu Glu Pro Glu His Ser Phe Ser Gly Ser Asp
            500 ·   505   510
Ser Glu Asp Ser Glu Leu Met Tyr Gln Pro Lys Ala Pro Glu Ile Asn
    515   520   525
Ile Ser Val Asn Xaa Leu Glu Xaa Glu Phe Val Arg Glu Ile Arg Gly
    530   535   540
Pro Ala Val Pro Arg Leu Thr Ser Ala Glu Asp Arg His Arg His Gly
545   550   555   560
Pro His Ala His Ser Pro Glu Leu Gln Arg Thr Gly Arg Asp Tyr Ser
            565 ·   570   575
Leu Asp Tyr Leu Pro Phe Arg Leu Trp Val Gly Ile Trp Val Ala Thr
    .   580   585   590
Phe Cys Leu Val Leu Val Ala Thr Glu Ala Ser Val Leu Val Arg Tyr
            595   600   605
Phe Thr Arg Phe Thr Glu Glu Gly Phe Cys Ala Leu Ile Ser Leu Ile
    610   615   620
Phe Ile Tyr Asp Ala Val Gly Lys Met Leu Asn Leu Thr His Thr Tyr
625   630   635   640
Pro Ile Gln Lys Pro Gly Ser Ser Ala Tyr Gly Cys Leu Cys Gln Tyr
            645   650   655
Pro Gly Pro Gly Gly Asn Glu Ser Gln Trp Ile Arg Thr Arg Pro Lys
        660   665   670
Asp Arg Asp Asp Ile Val Ser Met Asp Leu Gly Leu Ile Asn Ala Ser
    675   .   680   685
Leu Leu Pro Pro Pro Glu Cys Thr Arg Gln Gly Gly His Pro Arg Gly
    690   695   700
Pro Gly Cys His Thr Val Pro Asp Ile Ala Phe Phe Ser Leu Leu Leu
705   710   715   720
Phe Leu Thr Ser Phe Phe Phe Ala Met Ala Leu Lys Cys Val Lys Thr
            725   730   735

Ser Arg Phe Phe Pro Ser Val Val Arg Lys Gly Leu Ser Asp Phe Ser
              740   745   750
Ser Val Leu Ala Ile Leu Leu Gly Cys Gly Leu Asp Ala Phe Leu Gly
              755   760   765
Leu Ala Thr Pro Lys Leu Met Val Pro Arg Glu Phe Lys Pro Thr Leu
              770   775   780
Pro Gly Arg Gly Trp Leu Val Ser Pro Phe Gly Ala Asn Pro Trp Trp
          785   790   795   800
Trp Ser Val Ala Ala Ala Leu Pro Ala Leu Leu Leu Ser Ile Leu Ile
                  805   810   815
Phe Met Asp Gln Gln Ile Thr Ala Val Ile Leu Asn Arg Met Glu Tyr
              820   825   830
Arg Leu Gln Lys Gly Ala Gly Phe His Leu Asp Leu Phe Cys Val Ala
              835   840   845
Val Leu Met Leu Leu Thr Ser Ala Leu Gly Leu Pro Trp Tyr Val Ser
          850   855   860
Ala Thr Val Ile Ser Leu Ala His Met Asp Ser Leu Arg Arg Glu Ser
      865   870   875   880
Arg Ala Cys Ala Pro Gly Glu Arg Pro Asn Phe Leu Gly Ile Arg Glu
              885   890   895
Gln Arg Leu Thr Gly Leu Val Val Phe Ile Leu Thr Gly Ala Ser Ile
              900   905   910
Phe Leu Ala Pro Val Leu Lys Phe Ile Pro Met Pro Val Leu Tyr Gly
          915   920   925
Ile Phe Leu Tyr Met Gly Val Ala Ala Leu Ser Ser Ile Gln Phe Thr
      930   935   940
Asn Arg Val Lys Leu Leu Leu Asp Ala Ser Lys Thr Pro Ala Arg Pro
  945   950   955   960
Ala Thr Leu Ala Ala Cys Ala Ser Asp Gln Gly Pro Pro Leu His Ser
              965   970   975
His Gln Leu Cys Pro Val Trp Gly Cys Phe Gly Ile Ile Lys Ser Thr
              980   985   990
Pro Ala Ala Ile Ile Phe Pro Leu Met Leu Leu Gly Leu Val Gly Val
          995   1000   1005
Arg Lys Ala Leu Glu Arg Val Phe Ser Pro Gln Glu Leu Leu Trp Leu
      1010   1015   1020
Asp Glu Leu Met Pro Glu Glu Glu Arg Ser Ile Pro Glu Lys Gly Leu
1025   1030   1035   1040
Glu Pro Glu His Ser Phe Ser Gly Ser Asp Ser Glu Asp Ser Glu Leu
              1045   1050   1055
Met Tyr Gln Pro Lys Ala Pro Glu Ile Asn Ile Ser Val Asn
          1060   1065   1070

    <210> 1100
    <211> 875
    <212>Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(875)
    <223> X = any amino acid or stop code

    <400> 1100
Met Gly Leu Lys Ala Arg Arg Ala Ala Gly Ala Ala Gly Gly Gly Gly
  1   5   10   15
Asp Gly Gly Gly Gly Gly Gly Gly Ala Ala Asn Pro Ala Gly Gly Asp
          20   25   30
Ala Ala Ala Ala Gly Asp Glu Glu Arg Lys Val Gly Leu Ala Pro Gly

```
                    35                      40                      45
Asp Val Glu Gln Val Thr Leu Ala Leu Gly Ala Gly Ala Asp Lys Asp
        50                      55                      60
Gly Thr Leu Leu Leu Glu Gly Gly Gly Arg Asp Glu Gly Gln Arg Arg
65                      70                      75                      80
Thr Pro Gln Gly Ile Gly Leu Leu Ala Lys Thr Pro Leu Ser Arg Pro
                85                      90                      95
Val Lys Arg Asn Asn Ala Lys Tyr Arg Arg Ile Gln Thr Leu Ile Tyr
            100                     105                     110
Asp Ala Leu Glu Arg Pro Arg Gly Trp Ala Leu Leu Tyr His Ala Leu
        115                     120                     125
Val Phe Leu Ile Val Leu Gly Cys Leu Ile Leu Ala Val Leu Thr Thr
    130                     135                     140
Phe Lys Glu Tyr Glu Thr Val Ser Gly Asp Trp Leu Leu Leu Leu Glu
145                     150                     155                     160
Thr Phe Ala Ile Phe Ile Phe Gly Ala Glu Phe Ala Leu Arg Ile Trp
            165                     170                     175
Ala Ala Gly Cys Cys Cys Arg Tyr Lys Gly Trp Arg Gly Arg Leu Lys
        180                     185                     190
Phe Ala Arg Lys Pro Leu Cys Met Leu Asp Ile Phe Val Leu Ile Ala
    195                     200                     205
Ser Val Pro Val Val Ala Val Gly Asn Gln Gly Asn Val Leu Ala Thr
    210                     215                     220
Ser Leu Arg Ser Leu Arg Phe Leu Gln Ile Leu Arg Met Leu Arg Asp
225                     230                     235                     240
Gly Pro Gly Glu Gly Gly Thr Trp Lys Leu Leu Gly Ser Ala Ile Cys
                245                     250                     255
Ala His Ser Lys Glu Leu Ile Thr Ala Trp Tyr Ile Gly Phe Leu Thr
        260                     265                     270
Leu Ile Leu Ser Ser Phe Leu Val Tyr Leu Val Glu Lys Asp Val Pro
        275                     280                     285
Glu Val Asp Ala Gln Gly Glu Glu Met Lys Glu Glu Phe Glu Thr Tyr
    290                     295                     300
Ala Asp Ala Leu Trp Trp Gly Leu Ile Thr Leu Ala Thr Ile Gly Tyr
305                     310                     315                     320
Gly Asp Lys Thr Pro Lys Thr Trp Glu Gly Arg Leu Ile Ala Ala Thr
                325                     330                     335
Phe Ser Leu Ile Gly Val Ser Phe Phe Ala Leu Pro Ala Gly Ile Leu
            340                     345                     350
Gly Ser Gly Leu Ala Leu Lys Val Gln Glu Gln His Arg Gln Lys His
        355                     360                     365
Phe Glu Lys Arg Arg Lys Pro Ala Ala Glu Leu Ile Gln Ala Ala Trp
    370                     375                     380
Arg Tyr Tyr Ala Thr Asn Pro Asn Arg Ile Asp Leu Val Ala Thr Trp
385                     390                     395                     400
Arg Phe Tyr Glu Ser Val Val Ser Phe Pro Phe Phe Arg Lys Glu Gln
                405                     410                     415
Leu Glu Ala Ala Ser Ser Gln Lys Leu Gly Leu Leu Asp Arg Val Arg
            420                     425                     430
Leu Ser Asn Pro Arg Gly Ser Asn Thr Lys Gly Lys Leu Phe Thr Pro
        435                     440                     445
Leu Asn Val Asp Ala Ile Glu Glu Ser Pro Ser Lys Glu Pro Lys Pro
        450                     455                     460
Val Gly Leu Asn Asn Lys Glu Arg Phe Arg Thr Ala Phe Arg Met Lys
465                     470                     475                     480
Ala Tyr Ala Phe Trp Gln Ser Ser Glu Asp Ala Gly Thr Gly Asp Pro
            485                     490                     495
Met Ala Glu Asp Arg Gly Tyr Gly Asn Asp Phe Pro Ile Glu Asp Met
        500                     505                     510
Ile Pro Thr Leu Lys Ala Ala Ile Arg Ala Val Arg Ile Leu Gln Phe
    515                     520                     525
Arg Leu Tyr Lys Lys Lys Phe Lys Glu Thr Leu Arg Pro Tyr Asp Val
    530                     535                     540
Lys Asp Val Ile Glu Gln Tyr Ser Ala Gly His Leu Asp Met Leu Ser
```

```
545                      550                      555                      560
Arg Ile Lys Tyr Leu Gln Thr Arg Ile Asp Met Ile Phe Thr Pro Gly
                565                      570                      575
Pro Pro Ser Thr Pro Lys His Lys Lys Ser Gln Lys Gly Ser Ala Phe
            580                      585                      590
Thr Phe Pro Ser Gln Gln Ser Pro Arg Asn Glu Pro Tyr Val Ala Arg
            595                      600                      605
Pro Ser Thr Ser Glu Ile Glu Asp Gln Arg His Xaa Trp Gly Lys Phe
610                      615                      620
Val Lys Ser Leu Lys Gly Gln Val Gln Gly Leu Gly Arg Lys Leu Asp
625                      630                      635                      640
Phe Leu Val Asp Met His Met Gln His Met Glu Arg Leu Gln Val Gln
            645                      650                      655
Val Thr Glu Tyr Tyr Pro Thr Lys Gly Thr Ser Ser Pro Ala Glu Ala
            660                      665                      670
Glu Lys Lys Glu Asp Asn Arg Tyr Ser Asp Leu Lys Thr Ile Ile Cys
            675                      680                      685
Asn Tyr Ser Glu Thr Gly Pro Pro Glu Pro Pro Tyr Ser Phe His Gln
            690                      695                      700
Val Thr Ile Asp Lys Val Ser Pro Tyr Gly Phe Phe Ala His Asp Pro
705                      710                      715                      720
Val Asn Leu Pro Arg Gly Gly Pro Ser Ser Gly Lys Val Gln Ala Thr
            725                      730                      735
Pro Pro Ser Ser Ala Thr Thr Tyr Val Glu Arg Pro Thr Val Leu Pro
            740                      745                      750
Ile Leu Thr Leu Leu Asp Ser Arg Val Ser Cys His Ser Gln Ala Asp
            755                      760                      765
Leu Gln Gly Pro Tyr Ser Asp Arg Ile Ser Pro Arg Gln Arg Arg Ser
            770                      775                      780
Ile Thr Arg Asp Ser Asp Thr Pro Leu Ser Leu Met Ser Val Asn His
785                      790                      795                      800
Glu Glu Leu Glu Arg Ser Pro Ser Gly Phe Ser Ile Ser Gln Asp Arg
            805                      810                      815
Asp Asp Tyr Val Phe Gly Pro Asn Gly Gly Ser Ser Trp Met Arg Glu
            820                      825                      830
Lys Arg Tyr Leu Ala Glu Gly Glu Thr Asp Thr Asp Thr Asp Pro Phe
            835                      840                      845
Thr Pro Ser Gly Ser Met Pro Leu Ser Ser Thr Gly Asp Gly Ile Ser
            850                      855                      860
Asp Ser Val Trp Thr Pro Ser Asn Lys Pro Ile
865                      870                      875
```

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<210> 1101
<211> 3530
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(3530)
<223> X = any amino acid or stop code
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<400> 1101
Arg Thr Arg Gly Ile Ile Glu Phe Asp Pro Lys Tyr Thr Ala Phe Glu
1                        5                        10                       15
Val Glu Glu Asp Val Gly Leu Ile Met Ile Pro Val Val Arg Leu His
            20                       25                       30
Gly Thr Tyr Gly Tyr Val Thr Ala Asp Phe Ile Ser Gln Ser Ser Ser
            35                       40                       45
```

621

```
Ala Ser Pro Gly Gly Val Asp Tyr Ile Leu His Gly Ser Thr Val Thr
    50                      55              60
Phe Gln His Gly Gln Asn Leu Ser Phe Ile Asn Ile Ser Ile Ile Asp
65                      70              75                      80
Asp Asn Glu Ser Glu Phe Glu Glu Pro Ile Glu Ile Leu Leu Thr Gly
                85                      90                      95
Ala Thr Gly Gly Ala Val Leu Gly Arg His Leu Val Ser Arg Ile Ile
            100                     105             110
Ile Ala Lys Ser Asp Ser Pro Phe Gly Val Ile Arg Phe Leu Asn Gln
        115                     120                 125
Ser Lys Ile Ser Ile Ala Asn Pro Asn Ser Thr Met Ile Leu Ser Leu
    130                     135                 140
Val Leu Glu Arg Thr Gly Gly Leu Leu Gly Glu Ile Gln Val Asn Trp
145                     150                 155                 160
Glu Thr Val Gly Pro Asn Ser Gln Glu Ala Leu Leu Pro Gln Asn Arg
                165                     170                 175
Asp Ile Ala Asp Pro Val Ser Gly Leu Phe Tyr Phe Gly Glu Gly Glu
            180                     185                 190
Gly Gly Val Arg Thr Ile Ile Leu Thr Ile Tyr Pro His Glu Glu Ile
            195                     200                 205
Glu Val Glu Glu Thr Phe Ile Ile Lys Leu His Leu Val Lys Gly Glu
    210                     215                 220
Ala Lys Leu Asp Ser Arg Ala Lys Asp Val Thr Leu Thr Ile Gln Glu
225                     230                 235                 240
Phe Gly Asp Pro Asn Gly Val Val Gln Phe Ala Pro Glu Thr Leu Ser
                245                     250                 255
Lys Lys Thr Tyr Ser Glu Pro Leu Ala Leu Glu Gly Pro Leu Leu Ile
            260                     265                 270
Thr Phe Phe Val Arg Arg Val Lys Gly Thr Phe Gly Glu Ile Met Val
    275                     280                 285
Tyr Trp Glu Leu Ser Ser Glu Phe Asp Ile Thr Glu Asp Phe Leu Ser
    290                     295                 300
Thr Ser Gly Phe Phe Thr Ile Ala Asp Gly Glu Ser Glu Ala Ser Phe
305                     310                 315                 320
Asp Val His Leu Leu Pro Asp Glu Val Pro Glu Ile Glu Glu Asp Tyr
            325                     330                 335
Val Ile Gln Leu Val Ser Val Glu Gly Gly Ala Glu Leu Asp Leu Glu
            340                     345                 350
Lys Ser Ile Thr Trp Phe Ser Val Tyr Ala Asn Asp Asp Pro His Gly
            355                     360                 365
Val Phe Ala Leu Tyr Ser Asp Arg Gln Ser Ile Leu Ile Gly Gln Asn
    370                     375                 380
Leu Ile Arg Ser Ile Gln Ile Asn Ile Thr Arg Leu Ala Gly Thr Phe
385                     390                 395                 400
Gly Asp Val Ala Val Gly Leu Arg Ile Ser Ser Asp His Lys Glu Gln
            405                     410                 415
Pro Ile Val Thr Glu Asn Ala Glu Arg Gln Leu Val Val Lys Asp Gly
            420                     425                 430
Ala Thr Tyr Lys Val Asp Val Val Pro Ile Lys Asn Gln Val Phe Leu
        435                     440                 445
Ser Leu Gly Ser Asn Phe Thr Leu Gln Leu Val Thr Val Met Leu Val
    450                     455                 460
Gly Gly Arg Phe Tyr Gly Met Pro Thr Ile Leu Gln Glu Ala Lys Ser
465                     470                 475                 480
Ala Val Leu Pro Val Ser Glu Lys Ala Ala Asn Ser Gln Val Gly Phe
            485                     490                 495
Glu Ser Thr Ala Phe Gln Leu Met Asn Ile Thr Ala Gly Thr Ser His
            500                     505                 510
Val Met Ile Ser Arg Arg Gly Thr Tyr Gly Ala Leu Ser Val Ala Trp
        515                     520                 525
Thr Thr Gly Tyr Ala Pro Gly Leu Glu Ile Pro Glu Phe Ile Val Val
    530                     535                 540
Gly Asn Met Thr Pro Thr Leu Gly Ser Leu Ser Phe Ser His Gly Glu
545                     550                 555                 560
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Gln Arg Lys Gly Val Phe Leu Trp Thr Phe Pro Ser Pro Gly Trp Pro
                    565   570   575
Glu Ala Phe Val Leu His Leu Ser Gly Val Gln Ser Ser Ala Pro Gly
                580   585   590
Gly Ala Gln Leu Arg Ser Gly Phe Ile Val Ala Glu Ile Glu Pro Met
            595   600   605
Gly Val Phe Gln Phe Ser Thr Ser Ser Arg Asn Ile Ile Val Ser Glu
        610   615   620
Asp Thr Gln Met Ile Arg Leu His Val Gln Arg Leu Phe Gly Phe His
625   630   635   640
Ser Asp Leu Ile Lys Val Ser Tyr Gln Thr Thr Ala Gly Ser Ala Lys
                645   650   655
Pro Leu Glu Asp Phe Glu Pro Val Gln Asn Gly Glu Leu Phe Phe Gln
                660   665   670
Lys Phe Gln Thr Glu Val Asp Phe Glu Ile Thr Ile Ile Asn Asp Gln
        675   680   685
Leu Ser Glu Ile Glu Glu Phe Phe Tyr Ile Asn Leu Thr Ser Val Glu
        690   695   700
Ile Arg Gly Leu Gln Lys Phe Asp Val Asn Trp Ser Pro Arg Leu Asn
705   710   715   720
Leu Asp Phe Ser Val Ala Val Ile Thr Ile Leu Asp Asn Asp Asp Leu
                725   730   735
Ala Gly Met Asp Ile Ser Phe Pro Glu Thr Thr Val Ala Val Ala Val
            740   745   750
Asp Thr Thr Leu Ile Pro Val Glu Thr Glu Ser Thr Thr Tyr Leu Ser
        755   760   765
Thr Ser Lys Thr Thr Thr Ile Leu Gln Pro Thr Asn Val Val Ala Ile
    770   775   780
Val Thr Glu Ala Thr Gly Val Ser Ala Ile Pro Glu Lys Leu Val Thr
785   790   795   800
Leu His Gly Thr Pro Ala Val Ser Glu Lys Pro Asp Val Ala Thr Val
            805   810   815
Thr Ala Asn Val Ser Ile His Gly Thr Phe Ser Leu Gly Pro Ser Ile
            820   825   830
Val Tyr Ile Glu Glu Glu Met Lys Asn Gly Thr Phe Asn Thr Ala Glu
        835   840   845
Val Leu Ile Arg Arg Thr Gly Gly Phe Thr Gly Asn Val Ser Ile Thr
        850   855   860
Val Lys Thr Phe Gly Glu Arg Cys Ala Gln Met Glu Pro Asn Ala Leu
865   870   875   880
Pro Phe Arg Gly Ile Tyr Gly Ile Ser Asn Leu Thr Trp Ala Val Glu
                885   890   895
Glu Glu Asp Phe Glu Glu Gln Thr Leu Thr Leu Ile Phe Leu Asp Gly
                900   905   910
Glu Arg Glu Arg Lys Val Ser Val Gln Ile Leu Asp Asp Asp Glu Pro
        915   920   925
Glu Gly Gln Glu Phe Phe Tyr Val Phe Leu Thr Asn Pro Gln Gly Gly
        930   935   940
Ala Gln Ile Val Glu Gly Lys Asp Asp Thr Gly Phe Ala Ala Phe Ala
945   950   955   960
Met Val Ile Ile Thr Gly Ser Asp Leu His Asn Gly Ile Ile Gly Phe
                965   970   975
Ser Glu Glu Ser Gln Ser Gly Leu Glu Leu Arg Glu Gly Ala Val Met
            980   985   990
Arg Arg Leu His Leu Ile Val Thr Arg Gln Pro Asn Arg Ala Phe Glu
        995   1000   1005
Asp Val Lys Val Phe Trp Arg Val Thr Leu Asn Lys Thr Val Val Val
    1010   1015   1020
Leu Gln Lys Asp Gly Val Asn Leu Met Glu Glu Leu Gln Ser Val Ser
1025   1030   1035   1040
Gly Thr Thr Thr Cys Thr Met Gly Gln Thr Lys Cys Phe Ile Ser Ile
            1045   1050   1055
Glu Leu Lys Pro Glu Lys Val Pro Gln Val Glu Val Tyr Phe Phe Val
            1060   1065   1070

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Glu Leu Tyr Glu Ala Thr Ala Gly Ala Ala Ile Asn Asn Ser Ala Arg
    1075              1080              1085
Phe Ala Gln Ile Lys Ile Leu Glu Ser Asp Glu Ser Gln Ser Leu Val
    1090              1095              1100
Tyr Phe Ser Val Gly Ser Arg Leu Ala Val Ala His Lys Lys Ala Thr
1105              1110              1115              1120
Leu Ile Ser Leu Gln Val Ala Arg Asp Ser Gly Thr Gly Leu Met Met
              1125              1130              1135
Ser Val Asn Phe Ser Thr Gln Glu Leu Arg Ser Ala Glu Thr Ile Gly
    1140              1145              1150
Arg Thr Ile Ile Ser Pro Ala Ile Ser Gly Lys Asp Phe Val Ile Thr
    1155              1160              1165
Glu Gly Thr Leu Val Phe Glu Pro Gly Gln Arg Ser Thr Val Leu Asp
    1170              1175              1180
Val Ile Leu Thr Pro Glu Thr Gly Ser Leu Asn Ser Phe Pro Lys Arg
1185              1190              1195              1200
Phe Gln Ile Val Leu Phe Asp Pro Lys Gly Gly Ala Arg Ile Asp Lys
    1205              1210              1215
Val Tyr Gly Thr Ala Asn Ile Thr Leu Val Ser Asp Ala Asp Ser Gln
    1220              1225              1230
Ala Ile Trp Gly Leu Ala Asp Gln Leu His Gln Pro Val Asn Asp Asp
    1235              1240              1245
Ile Leu Asn Arg Val Leu His Thr Ile Ser Met Lys Val Ala Thr Glu
    1250              1255              1260
Asn Thr Asp Glu Gln Leu Ser Ala Met Met His Leu Ile Glu Lys Ile
1265              1270              1275              1280
Thr Thr Glu Gly Lys Ile Gln Ala Phe Ser Val Ala Ser Arg Thr Leu
              1285              1290              1295
Phe Tyr Glu Ile Leu Cys Ser Leu Ile Asn Pro Lys Arg Lys Asp Thr
    1300              1305              1310
Arg Gly Phe Ser His Phe Ala Glu Leu Thr Glu Asn Phe Ala Phe Ser
    1315              1320              1325
Leu Leu Thr Asn Val Thr Cys Gly Ser Pro Gly Glu Lys Ser Lys Thr
    1330              1335              1340
Ile Leu Asp Ser Cys Pro Tyr Leu Ser Ile Leu Ala Leu His Trp Tyr
1345              1350              1355              1360
Pro Gln Gln Ile Asn Gly His Lys Phe Glu Gly Lys Glu Gly Asp Tyr
              1365              1370              1375
Ile Arg Ile Pro Glu Arg Leu Leu Asp Val Gln Asp Ala Glu Ile Met
    1380              1385              1390
Ala Gly Lys Ser Thr Cys Lys Leu Val Gln Phe Thr Glu Tyr Ser Ser
    1395              1400              1405
Gln Gln Trp Phe Ile Ser Gly Asn Asn Leu Pro Thr Leu Lys Asn Lys
    1410              1415              1420
Val Leu Ser Leu Ser Val Lys Gly Gln Ser Ser Gln Leu Leu Thr Asn
1425              1430              1435              1440
Asp Asn Glu Val Leu Tyr Arg Ile Tyr Ala Ala Glu Pro Arg Ile Ile
              1445              1450              1455
Pro Gln Thr Ser Leu Cys Leu Leu Trp Asn Gln Ala Ala Ala Ser Trp
    1460              1465              1470
Leu Ser Asp Ser Gln Phe Cys Lys Val Ile Glu Glu Thr Ala Asp Tyr
    1475              1480              1485
Val Glu Cys Ala Cys Leu His Met Ser Val Tyr Ala Val Tyr Ala Arg
    1490              1495              1500
Thr Asp Asn Leu Ser Ser Tyr Asn Glu Ala Phe Phe Thr Ser Gly Phe
1505              1510              1515              1520
Ile Cys Ile Ser Gly Leu Cys Leu Ala Val Leu Ser His Ile Phe Cys
              1525              1530              1535
Ala Arg Tyr Ser Met Phe Ala Ala Lys Leu Leu Thr His Met Met Ala
    1540              1545              1550
Ala Ser Leu Gly Thr Gln Ile Leu Phe Leu Ala Ser Ala Tyr Ala Ser
    1555              1560              1565
Pro Gln Leu Ala Glu Glu Ser Cys Ser Ala Met Ala Ala Val Thr His
    1570              1575              1580
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Tyr Leu Tyr Leu Cys Gln Phe Ser Trp Met Leu Ile Gln Ser Val Asn
1585   1590   1595   1600
Phe Trp Tyr Val Leu Val Met Asn Asp Glu His Thr Glu Arg Arg Tyr
          1605   1610   1615
Leu Leu Phe Phe Leu Leu Ser Trp Gly Leu Pro Ala Phe Val Val Ile
      1620   1625   1630
Leu Leu Ile Val Ile Leu Lys Gly Ile Tyr His Gln Ser Met Ser Gln
      1635   1640   1645
Ile Tyr Gly Leu Ile His Gly Asp Leu Cys Phe Ile Pro Asn Val Tyr
    1650   1655   1660
Ala Ala Leu Phe Thr Ala Ala Leu Val Pro Leu Thr Cys Leu Val Val
1665   1670   1675   1680
Val Phe Val Val Phe Ile His Ala Tyr Gln Val Lys Pro Gln Trp Lys
          1685   1690   1695
Ala Tyr Asp Asp Val Phe Arg Gly Arg Thr Asn Ala Ala Glu Ile Pro
          1700   1705   1710
Leu Ile Leu Tyr Leu Phe Ala Leu Ile Ser Val Thr Trp Leu Trp Gly
      1715   1720   1725
Gly Leu His Met Ala Tyr Arg His Phe Trp Met Leu Val Leu Phe Val
    1730   1735   1740
Ile Phe Asn Ser Leu Gln Leu Leu Tyr Pro Leu Phe Tyr Phe Leu Leu
1745   1750   1755   1760
Leu Xaa Asp Gln Ser Ser Ser Ala Ser Pro Gly Gly Val Asp Tyr Ile
          1765   1770   1775
Leu His Gly Ser Thr Val Thr Phe Gln His Gly Gln Asn Leu Ser Phe
      1780   1785   1790
Ile Asn Ile Ser Ile Ile Asp Asp Asn Glu Ser Glu Phe Glu Glu Pro
    1795   1800   1805
Ile Glu Ile Leu Leu Thr Gly Ala Thr Gly Gly Ala Val Leu Gly Arg
    1810   1815   1820
His Leu Val Ser Arg Ile Ile Ile Ala Lys Ser Asp Ser Pro Phe Gly
1825   1830   1835   1840
Val Ile Arg Phe Leu Asn Gln Ser Lys Ile Ser Ile Ala Asn Pro Asn
          1845   1850   1855
Ser Thr Met Ile Leu Ser Leu Val Leu Glu Arg Thr Gly Gly Leu Leu
      1860   1865   1870
Gly Glu Ile Gln Val Asn Trp Glu Thr Val Gly Pro Asn Ser Gln Glu
    1875   1880   1885
Ala Leu Leu Pro Gln Asn Arg Asp Ile Ala Asp Pro Val Ser Gly Leu
    1890   1895   1900
Phe Tyr Phe Gly Glu Gly Glu Gly Gly Val Arg Thr Ile Ile Leu Thr
1905   1910   1915   1920
Ile Tyr Pro His Glu Glu Ile Glu Val Glu Glu Thr Phe Ile Ile Lys
          1925   1930   1935
Leu His Leu Val Lys Gly Glu Ala Lys Leu Asp Ser Arg Ala Lys Asp
      1940   1945   1950
Val Thr Leu Thr Ile Gln Glu Phe Gly Asp Pro Asn Gly Val Val Gln
    1955   1960   1965
Phe Ala Pro Glu Thr Leu Ser Lys Lys Thr Tyr Ser Glu Pro Leu Ala
    1970   1975   1980
Leu Glu Gly Pro Leu Leu Ile Thr Phe Phe Val Arg Arg Val Lys Gly
1985   1990   1995   2000
Thr Phe Gly Glu Ile Met Val Tyr Trp Glu Leu Ser Ser Glu Phe Asp
          2005   2010   2015
Ile Thr Glu Asp Phe Leu Ser Thr Ser Gly Phe Phe Thr Ile Ala Asp
          2020   2025   2030
Gly Glu Ser Glu Ala Ser Phe Asp Val His Leu Leu Pro Asp Glu Val
      2035   2040   2045
Pro Glu Ile Glu Glu Asp Tyr Val Ile Gln Leu Val Ser Val Glu Gly
    2050   2055   2060
Gly Ala Glu Leu Asp Leu Glu Lys Ser Ile Thr Trp Phe Ser Val Tyr
2065   2070   2075   2080
Ala Asn Asp Asp Pro His Gly Val Phe Ala Leu Tyr Ser Asp Arg Gln
          2085   2090   2095

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Ser Ile Leu Ile Gly Gln Asn Leu Ile Arg Ser Ile Gln Ile Asn Ile
         2100                    2105                2110
Thr Arg Leu Ala Gly Thr Phe Gly Asp Val Ala Val Gly Leu Arg Ile
         2115                    2120                2125
Ser Ser Asp His Lys Glu Gln Pro Ile Val Thr Glu Asn Ala Glu Arg
         2130                    2135                2140
Gln Leu Val Val Lys Asp Gly Ala Thr Tyr Lys Val Asp Val Val Pro
2145                    2150                2155                2160
Ile Lys Asn Gln Val Phe Leu Ser Leu Gly Ser Asn Phe Thr Leu Gln
         2165                    2170                2175
Leu Val Thr Val Met Leu Val Gly Gly Arg Phe Tyr Gly Met Pro Thr
         2180                    2185                2190
Ile Leu Gln Glu Ala Lys Ser Ala Val Leu Pro Val Ser Glu Lys Ala
         2195                    2200                2205
Ala Asn Ser Gln Val Gly Phe Glu Ser Thr Ala Phe Gln Leu Met Asn
2210                    2215                    2220
Ile Thr Ala Gly Thr Ser His Val Met Ile Ser Arg Arg Gly Thr Tyr
2225                    2230                    2235                2240
Gly Ala Leu Ser Val Ala Trp Thr Thr Gly Tyr Ala Pro Gly Leu Glu
         2245                    2250                2255
Ile Pro Glu Phe Ile Val Val Gly Asn Met Thr Pro Thr Leu Gly Ser
         2260                    2265                2270
Leu Ser Phe Ser His Gly Glu Gln Arg Lys Gly Val Phe Leu Trp Thr
         2275                    2280                2285
Phe Pro Ser Pro Gly Trp Pro Glu Ala Phe Val Leu His Leu Ser Gly
         2290                    2295                2300
Val Gln Ser Ser Ala Pro Gly Gly Ala Gln Leu Arg Ser Gly Phe Ile
2305                    2310                    2315                2320
Val Ala Glu Ile Glu Pro Met Gly Val Phe Gln Phe Ser Thr Ser Ser
         2325                    2330                    2335
Arg Asn Ile Ile Val Ser Glu Asp Thr Gln Met Ile Arg Leu His Val
         2340                    2345                    2350
Gln Arg Leu Phe Gly Phe His Ser Asp Leu Ile Lys Val Ser Tyr Gln
         2355                    2360                2365
Thr Thr Ala Gly Ser Ala Lys Pro Leu Glu Asp Phe Glu Pro Val Gln
    2370                    2375                2380
Asn Gly Glu Leu Phe Phe Gln Lys Phe Gln Thr Glu Val Asp Phe Glu
2385                    2390                    2395                2400
Ile Thr Ile Ile Asn Asp Gln Leu Ser Glu Ile Glu Glu Phe Phe Tyr
         2405                    2410                    2415
Ile Asn Leu Thr Ser Val Glu Ile Arg Gly Leu Gln Lys Phe Asp Val
         2420                    2425                2430
Asn Trp Ser Pro Arg Leu Asn Leu Asp Phe Ser Val Ala Val Ile Thr
         2435                    2440                2445
Ile Leu Asp Asn Asp Asp Leu Ala Gly Met Asp Ile Ser Phe Pro Glu
         2450                    2455                2460
Thr Thr Val Ala Val Ala Val Asp Thr Thr Leu Ile Pro Val Glu Thr
2465                    2470                    2475                2480
Glu Ser Thr Thr Tyr Leu Ser Thr Ser Lys Thr Thr Thr Ile Leu Gln
         2485                    2490                    2495
Pro Thr Asn Val Val Ala Ile Val Thr Glu Ala Thr Gly Val Ser Ala
         2500                    2505                2510
Ile Pro Glu Lys Leu Val Thr Leu His Gly Thr Pro Ala Val Ser Glu
         2515                    2520                2525
Lys Pro Asp Val Ala Thr Val Thr Ala Asn Val Ser Ile His Gly Thr
         2530                    2535                2540
Phe Ser Leu Gly Pro Ser Ile Val Tyr Ile Glu Glu Glu Met Lys Asn
2545                    2550                    2555                2560
Gly Thr Phe Asn Thr Ala Glu Val Leu Ile Arg Arg Thr Gly Gly Phe
         2565                    2570                2575
Thr Gly Asn Val Ser Ile Thr Val Lys Thr Phe Gly Glu Arg Cys Ala
         2580                    2585                2590
Gln Met Glu Pro Asn Ala Leu Pro Phe Arg Gly Ile Tyr Gly Ile Ser
         2595                    2600                2605
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Asn Leu Thr Trp Ala Val Glu Glu Glu Asp Phe Glu Glu Gln Thr Leu
   2610   2615   2620
Thr Leu Ile Phe Leu Asp Gly Glu Arg Glu Arg Lys Val Ser Val Gln
2625   2630   2635   2640
Ile Leu Asp Asp Asp Glu Pro Glu Gly Gln Glu Phe Phe Tyr Val Phe
            2645   2650   2655
Leu Thr Asn Pro Gln Gly Gly Ala Gln Ile Val Glu Gly Lys Asp Asp
            2660   2665   2670
Thr Gly Phe Ala Ala Phe Ala Met Val Ile Ile Thr Gly Ser Asp Leu
   2675   2680   2685
His Asn Gly Ile Ile Gly Phe Ser Glu Glu Ser Gln Ser Gly Leu Glu
   2690   2695   2700
Leu Arg Glu Gly Ala Val Met Arg Arg Leu His Leu Ile Val Thr Arg
2705   2710   2715   2720
Gln Pro Asn Arg Ala Phe Glu Asp Val Lys Val Phe Trp Arg Val Thr
            2725   2730   2735
Leu Asn Lys Thr Val Val Val Leu Gln Lys Asp Gly Val Asn Leu Met
            2740   2745   2750
Glu Glu Leu Gln Ser Val Ser Gly Thr Thr Thr Cys Thr Met Gly Gln
   2755   2760   2765
Thr Lys Cys Phe Ile Ser Ile Glu Leu Lys Pro Glu Lys Val Pro Gln
   2770   2775   2780
Val Glu Val Tyr Phe Phe Val Glu Leu Tyr Glu Ala Thr Ala Gly Ala
2785   2790   2795   2800
Ala Ile Asn Asn Ser Ala Arg Phe Ala Gln Ile Lys Ile Leu Glu Ser
            2805   2810   2815
Asp Glu Ser Gln Ser Leu Val Tyr Phe Ser Val Gly Ser Arg Leu Ala
            2820   2825   2830
Val Ala His Lys Lys Ala Thr Leu Ile Ser Leu Gln Val Ala Arg Asp
   2835   2840   2845
Ser Gly Thr Gly Leu Met Met Ser Val Asn Phe Ser Thr Gln Glu Leu
   2850   2855   2860
Arg Ser Ala Glu Thr Ile Gly Arg Thr Ile Ile Ser Pro Ala Ile Ser
2865   2870   2875   2880
Gly Lys Asp Phe Val Ile Thr Glu Gly Thr Leu Val Phe Glu Pro Gly
            2885   2890   2895
Gln Arg Ser Thr Val Leu Asp Val Ile Leu Thr Pro Glu Thr Gly Ser
            2900   2905   2910
Leu Asn Ser Phe Pro Lys Arg Phe Gln Ile Val Leu Phe Asp Pro Lys
   2915   2920   2925
Gly Gly Ala Arg Ile Asp Lys Val Tyr Gly Thr Ala Asn Ile Thr Leu
   2930   2935   2940
Val Ser Asp Ala Asp Ser Gln Ala Ile Trp Gly Leu Ala Asp Gln Leu
2945   2950   2955   2960
His Gln Pro Val Asn Asp Asp Ile Leu Asn Arg Val Leu His Thr Ile
            2965   2970   2975
Ser Met Lys Val Ala Thr Glu Asn Thr Asp Glu Gln Leu Ser Ala Met
            2980   2985   2990
Met His Leu Ile Glu Lys Ile Thr Thr Glu Gly Lys Ile Gln Ala Phe
   2995   3000   3005
Ser Val Ala Ser Arg Thr Leu Phe Tyr Glu Ile Leu Cys Ser Leu Ile
   3010   3015   3020
Asn Pro Lys Arg Lys Asp Thr Arg Gly Phe Ser His Phe Ala Glu Leu
3025   3030   3035   3040
Thr Glu Asn Phe Ala Phe Ser Leu Leu Thr Asn Val Thr Cys Gly Ser
            3045   3050   3055
Pro Gly Glu Lys Ser Lys Thr Ile Leu Asp Ser Cys Pro Tyr Leu Ser
            3060   3065   3070
Ile Leu Ala Leu His Trp Tyr Pro Gln Gln Ile Asn Gly His Lys Phe
   3075   3080   3085
Glu Gly Lys Glu Gly Asp Tyr Ile Arg Ile Pro Glu Arg Leu Leu Asp
   3090   3095   3100
Val Gln Asp Ala Glu Ile Met Ala Gly Lys Ser Thr Cys Lys Leu Val
3105   3110   3115   3120

Gln Phe Thr Glu Tyr Ser Ser Gln Gln Trp Phe Ile Ser Gly Asn Asn
            3125   3130   3135
Leu Pro Thr Leu Lys Asn Lys Val Leu Ser Leu Ser Val Lys Gly Gln
            3140   3145   3150
Ser Ser Gln Leu Leu Thr Asn Asp Asn Glu Val Leu Tyr Arg Ile Tyr
        3155   3160   3165
Ala Ala Glu Pro Arg Ile Ile Pro Gln Thr Ser Leu Cys Leu Leu Trp
    3170   3175   3180
Asn Gln Ala Ala Ala Ser Trp Leu Ser Asp Ser Gln Phe Cys Lys Val
3185   3190   3195   3200
Ile Glu Glu Thr Ala Asp Tyr Val Glu Cys Ala Cys Leu His Met Ser
            3205   3210   3215
Val Tyr Ala Val Tyr Ala Arg Thr Asp Asn Leu Ser Ser Tyr Asn Glu
        3220   3225   3230
Ala Phe Phe Thr Ser Gly Phe Ile Cys Ile Ser Gly Leu Cys Leu Ala
        3235   3240   3245
Val Leu Ser His Ile Phe Cys Ala Arg Tyr Ser Met Phe Ala Ala Lys
    3250   3255   3260
Leu Leu Thr His Met Met Ala Ala Ser Leu Gly Thr Gln Ile Leu Phe
3265   3270   3275   3280
Leu Ala Ser Ala Tyr Ala Ser Pro Gln Leu Ala Glu Glu Ser Cys Ser
            3285   3290   3295
Ala Met Ala Ala Val Thr His Tyr Leu Tyr Leu Cys Gln Phe Ser Trp
        3300   3305   3310
Met Leu Ile Gln Ser Val Asn Phe Trp Tyr Val Leu Val Met Asn Asp
    3315   3320   3325
Glu His Thr Glu Arg Arg Tyr Leu Leu Phe Phe Leu Leu Ser Trp Gly
    3330   3335   3340
Leu Pro Ala Phe Val Val Ile Leu Leu Ile Val Ile Leu Lys Gly Ile
3345   3350   3355   3360
Tyr His Gln Ser Met Ser Gln Ile Tyr Gly Leu Ile His Gly Asp Leu
            3365   3370   3375
Cys Phe Ile Pro Asn Val Tyr Ala Ala Leu Phe Thr Ala Ala Leu Val
        3380   3385   3390
Pro Leu Thr Cys Leu Val Val Val Phe Val Val Phe Ile His Ala Tyr
        3395   3400   3405
Gln Val Lys Pro Gln Trp Lys Ala Tyr Asp Asp Val Phe Arg Gly Arg
    3410   3415   3420
Thr Asn Ala Ala Glu Ile Pro Leu Ile Leu Tyr Leu Phe Ala Leu Ile
3425   3430   3435   3440
Ser Val Thr Trp Leu Trp Gly Gly Leu His Met Ala Tyr Arg His Phe
            3445   3450   3455
Trp Met Leu Val Leu Phe Val Ile Phe Asn Ser Leu Gln Leu Leu Val
        3460   3465   3470
Pro Ser Val Leu Leu Phe Thr Ser Met Arg Ser Thr Phe Phe Ser Phe
        3475   3480   3485
His Thr Gly Thr Leu Thr Ser Arg Glu Lys Lys Ser Thr Phe Val Leu
    3490   3495   3500
Thr Cys Leu Leu Ser Pro Asp Ser Lys Gly Leu Gly Val Leu Cys Phe
3505   3510   3515   3520
Leu Asn Thr Glu Trp Ala Phe Gln Val His
            3525   3530

<210> 1102
<211> 945
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(945)
<223> X = any amino acid or stop code

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<400> 1102
Ala Ala Gly Ala Thr Met Glu Arg Asp Gly Cys Ala Gly Gly Gly Ser
1               5                   10                  15
Arg Gly Gly Glu Gly Gly Arg Ala Pro Arg Glu Gly Pro Ala Gly Asn
            20                  25                  30
Gly Arg Asp Arg Gly Arg Ser His Ala Ala Glu Ala Pro Gly Asp Pro
        35                  40                  45
Gln Ala Ala Ala Ser Leu Leu Ala Pro Met Asp Val Gly Glu Glu Pro
    50                  55                  60
Leu Glu Lys Ala Ala Arg Ala Arg Thr Ala Lys Asp Pro Asn Thr Tyr
65                  70                  75                  80
Lys Val Leu Ser Leu Val Leu Ser Val Cys Val Leu Thr Thr Ile Leu
            85                  90                  95
Gly Cys Ile Phe Gly Leu Lys Pro Ser Cys Ala Lys Glu Val Lys Ser
            100                 105                 110
Cys Lys Gly Arg Cys Phe Glu Arg Thr Phe Gly Asn Cys Arg Cys Asp
        115                 120                 125
Ala Ala Cys Val Glu Leu Gly Asn Cys Cys Leu Gly Leu Pro Gly Gly
    130                 135                 140
Thr Cys Ile Glu Pro Glu His Ile Trp Thr Cys Asn Lys Phe Arg Cys
145                 150                 155                 160
Gly Glu Lys Arg Leu Thr Arg Ser Leu Cys Ala Cys Ser Asp Asp Cys
            165                 170                 175
Lys Asp Arg Gly Asp Cys Leu Pro Ser Asn Leu Gln Phe Leu Cys Val
            180                 185                 190
Gln Gly Glu Lys Ser Trp Gly Arg Lys Asn Pro Cys Glu Ser His Leu
    195                 200                 205
Met Glu Pro Gln Cys Pro Ala Gly Phe Glu Thr Pro Ser Leu Pro Leu
210                 215                 220
Leu Ile Phe Ser Leu Asp Gly Phe Arg Ala Glu Tyr Leu His Thr Trp
225                 230                 235                 240
Gly Gly Leu Leu Pro Val Ile Ser Lys Leu Lys Lys Cys Gly Thr Tyr
            245                 250                 255
Thr Lys Asn Met Arg Pro Val Tyr Pro Thr Lys Thr Phe Pro Asn His
            260                 265                 270
Tyr Ser Ile Val Thr Gly Leu Tyr Pro Glu Ser His Gly Ile Ile Asn
    275                 280                 285
Asn Lys Met Tyr Asp Pro Lys Met Asn Ala Ser Phe Ser Leu Lys Ser
    290                 295                 300
Lys Glu Lys Phe Asn Pro Glu Trp Tyr Lys Gly Glu Pro Ile Trp Val
305                 310                 315                 320
Thr Ala Lys Tyr Gln Gly Leu Lys Ser Gly Thr Phe Phe Trp Pro Gly
            325                 330                 335
Ser Asp Val Glu Ile Asn Gly Ile Phe Pro Asp Ile Tyr Lys Met Tyr
        340                 345                 350
Asn Gly Ser Val Pro Phe Glu Glu Arg Ile Leu Ala Val Leu Gln Trp
        355                 360                 365
Leu Gln Leu Pro Lys Asp Glu Arg Pro His Phe Tyr Thr Leu Tyr Leu
    370                 375                 380
Glu Glu Pro Asp Ser Ser Gly His Ser Tyr Gly Pro Val Ser Ser Glu
385                 390                 395                 400
Val Ile Lys Ala Leu Gln Arg Val Asp Gly Met Val Gly Met Leu Met
            405                 410                 415
Asp Gly Leu Lys Glu Leu Asn Leu His Arg Cys Leu Asn Leu Ile Leu
            420                 425                 430
Ile Ser Asp His Gly Met Glu Gln Gly Ser Cys Lys Lys Tyr Ile Tyr
        435                 440                 445
Leu Asn Lys Tyr Leu Gly Asp Val Lys Asn Ile Lys Val Ile Tyr Gly
    450                 455                 460
Pro Ala Ala Arg Leu Arg Pro Ser Asp Val Pro Asp Lys Tyr Tyr Ser
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         465                    470                    475                    480
Phe Asn Tyr Glu Gly Ile Ala Arg Asn Leu Ser Cys Arg Glu Pro Asn
                 485                    490                    495
Gln His Phe Lys Pro Tyr Leu Lys His Phe Leu Pro Lys Arg Leu His
             500                    505                    510
Phe Ala Lys Ser Asp Arg Ile Glu Pro Leu Thr Phe Tyr Leu Asp Pro
         515                    520                    525
Gln Trp Gln Leu Ala Leu Asn Pro Ser Glu Arg Lys Tyr Cys Gly Ser
     530                    535                    540
Gly Phe His Gly Ser Asp Asn Val Phe Ser Asn Met Gln Ala Leu Phe
545                    550                    555                    560
Val Gly Tyr Gly Pro Gly Phe Lys His Gly Ile Glu Ala Asp Thr Phe
                 565                    570                    575
Glu Asn Ile Glu Val Tyr Asn Leu Met Cys Asp Leu Leu Asn Leu Thr
             580                    585                    590
Pro Ala Pro Asn Asn Gly Thr His Gly Ser Leu Asn His Leu Leu Lys
         595                    600                    605
Asn Pro Val Tyr Thr Pro Lys His Pro Lys Glu Val His Pro Leu Val
     610                    615                    620
Gln Cys Pro Phe Thr Arg Asn Pro Arg Asp Asn Leu Gly Cys Ser Cys
625                    630                    635                    640
Asn Pro Ser Ile Leu Pro Ile Glu Asp Phe Gln Thr Gln Phe Asn Leu
                 645                    650                    655
Thr Val Ala Glu Glu Lys Ile Ile Lys His Glu Thr Leu Pro Tyr Gly
             660                    665                    670
Arg Pro Arg Val Leu Gln Lys Glu Asn Thr Ile Cys Leu Leu Ser Gln
         675                    680                    685
His Gln Phe Met Ser Gly Tyr Ser Gln Asp Ile Leu Met Pro Leu Trp
     690                    695                    700
Thr Ser Tyr Thr Val Asp Arg Asn Asp Ser Phe Ser Thr Glu Asp Phe
705                    710                    715                    720
Ser Asn Cys Leu Tyr Gln Asp Phe Arg Ile Pro Leu Ser Pro Val His
                 725                    730                    735
Lys Cys Ser Phe Tyr Lys Asn Asn Thr Lys Val Ser Tyr Gly Phe Leu
             740                    745                    750
Ser Pro Pro Gln Leu Asn Lys Asn Ser Ser Gly Ile Tyr Ser Glu Ala
         755                    760                    765
Leu Leu Thr Thr Asn Ile Val Pro Met Tyr Gln Ser Phe Gln Val Ile
     770                    775                    780
Trp Arg Tyr Phe His Asp Thr Leu Leu Arg Lys Tyr Ala Glu Glu Arg
785                    790                    795                    800
Asn Gly Val Asn Val Val Ser Gly Pro Val Phe Asp Phe Asp Tyr Asp
                 805                    810                    815
Gly Arg Cys Asp Ser Leu Glu Asn Leu Arg Gln Lys Arg Arg Val His
             820                    825                    830
Pro Val Thr Gln Glu Asn Phe Trp Ile Pro Asn Ser Thr Ser Phe Tyr
         835                    840                    845
Val Val Leu Thr Ser Cys Lys Asp Thr Ser Gln Thr Pro Leu His Cys
     850                    855                    860
Glu Asn Leu Asp Thr Leu Gly Phe Pro Phe Cys Leu His Arg Asp Trp
865                    870                    875                    880
Ile Asn Ser Glu Thr Cys Val His Gly Lys His Asp Ser Ser Trp Val
                 885                    890                    895
Glu Glu Phe Val Lys Cys Leu His Arg Ala Arg Ile Thr Gly Cys Xaa
             900                    905                    910
Gly Thr Ser Leu Gly Leu Ser Phe Tyr Gln Gln Arg Lys Glu Pro Val
         915                    920                    925
Ser Asp Ile Leu Lys Leu Lys Thr His Leu Pro Thr Phe Ser Gln Glu
     930                    935                    940
Asp
945
```

<210> 1103

<211> 217
<212>Amino acid
<213> Homo sapiens

<400> 1103
Thr Val Pro Pro Pro Pro Gly Gly Pro Ser Pro Ala Pro Leu His Pro
1   5   10   15
Lys Arg Ser Pro Thr Ser Thr Gly Glu Ala Glu Leu Lys Glu Glu Arg
            20   25   30
Leu Pro Gly Arg Lys Ala Ser Cys Ser Thr Ala Gly Ser Gly Ser Arg
        35   40   45
Gly Leu Pro Pro Leu Ser Pro Met Val Ser Ser Ala His Asn Pro Asn
    50   55   60
Lys Ala Glu Ile Pro Glu Arg Arg Lys Asp Ser Thr Ser Thr Pro Asn
65   70   75   80
Asn Leu Pro Pro Ser Met Met Thr Arg Arg Asn Thr Tyr Val Cys Thr
            85   90   95
Glu Arg Pro Gly Ala Glu Arg Pro Ser Leu Leu Pro Asn Gly Lys Glu
            100   105   110
Asn Ser Ser Gly Thr Pro Arg Val Pro Pro Ala Ser Pro Ser Ser His
    115   120   125
Ser Leu Ala Pro Pro Ser Gly Glu Arg Ser Arg Leu Ala Arg Gly Ser
    130   135   140
Thr Ile Arg Ser Thr Phe His Gly Gly Gln Val Arg Asp Arg Arg Ala
145   150   155   160
Gly Gly Trp Gly Trp Phe Phe Asn Lys His Ala Leu Gln Arg Ala Pro
            165   170   175
Arg Asn Ala Gly Ala Pro Ser Leu Met Pro Gly His Arg Thr Val Leu
            180   185   190
Ile Asn Tyr Gly Gly Gly Gln Asp Leu Lys Asn Trp Glu Thr Cys Leu
    195   200   205
Ala Ala Pro Pro Asn Lys His Arg Arg
    210   215   217

<210> 1104
<211> 436
<212>Amino acid
<213> Homo sapiens

<400> 1104
His Thr Leu His His Ser Ser Pro Thr Ser Glu Ala Glu Glu Phe Val
1   5   10   15
Ser Arg Leu Ser Thr Gln Asn Tyr Phe Arg Ser Leu Pro Arg Gly Thr
            20   25   30
Ser Asn Met Thr Tyr Gly Thr Phe Asn Phe Leu Gly Gly Arg Leu Met
        35   40   45
Ile Pro Asn Thr Gly Ile Ser Leu Leu Ile Pro Pro Asp Ala Ile Pro
    50   55   60
Arg Gly Lys Ile Tyr Glu Ile Tyr Leu Thr Leu His Lys Pro Glu Asp
65   70   75   80
Val Arg Leu Pro Leu Ala Gly Cys Gln Thr Leu Leu Ser Pro Ile Val
            85   90   95
Ser Cys Gly Pro Pro Gly Val Leu Leu Thr Arg Pro Val Ile Leu Gly
            100   105   110
Met Asp His Cys Gly Glu Pro Ser Pro Asp Ser Trp Ser Leu Arg Leu

```
              115                      120                      125
Lys Lys Gln Ser Cys Glu Gly Ser Trp Glu Asp Val Leu His Leu Gly
         130                      135                      140
Glu Glu Ala Pro Ser His Leu Tyr Tyr Cys Gln Leu Glu Ala Ser Ala
145                      150                      155                      160
Cys Tyr Val Phe Thr Glu Gln Leu Ser Arg Tyr Ala Leu Val Gly Glu
                   165                      170                      175
Ala Leu Ser Val Ala Ala Ala Lys Arg Leu Lys Leu Leu Leu Phe Ala
                   180                      185                      190
Pro Val Ala Cys Thr Ser Leu Glu Tyr Asn Ile Leu Val Tyr Cys Leu
                   195                      200                      205
His Asp Thr His Asp Ala Leu Asn Val Val Val Gln Leu Glu Lys Gln
         210                      215                      220
Leu Gln Gly Gln Leu Ile Gln Glu Pro Leu Val Leu His Phe Lys Asp
225                      230                      235                      240
Ser Tyr His Asn Leu Arg Leu Ser Ile His Asp Val Pro Ser Ser Leu
                   245                      250                      255
Trp Lys Ser Lys Leu Leu Val Ser Tyr Gln Glu Ile Pro Phe Tyr His
                   260                      265                      270
Ile Trp Asn Gly Thr Gln Arg Tyr Leu His Cys Thr Phe Thr Leu Glu
                   275                      280                      285
Arg Val Ser Pro Ser Thr Ser Asp Leu Ala Cys Lys Leu Trp Val Trp
         290                      295                      300
Gln Val Glu Gly Asp Gly Gln Ser Phe Ser Ile Asn Phe Asn Ile Thr
305                      310                      315                      320
Lys Asp Thr Arg Phe Ala Glu Leu Leu Ala Leu Glu Ser Glu Ala Gly
                   325                      330                      335
Val Pro Ala Leu Val Gly Pro Ser Ala Phe Lys Ile Pro Phe Leu Ile
                   340                      345                      350
Arg Gln Lys Ile Ile Ser Ser Leu Asp Pro Pro Cys Arg Arg Gly Ala
         355                      360                      365
Asp Trp Arg Thr Leu Ala Gln Lys Leu His Leu Asp Ser His Leu Ser
370                      375                      380
Phe Phe Ala Ser Lys Pro Ser Pro Thr Ala Met Ile Leu Asn Leu Trp
385                      390                      395                      400
Glu Ala Arg His Phe Pro Asn Gly Asn Leu Ser Gln Leu Ala Ala Ala
                   405                      410                      415
Val Ala Gly Thr Gly Pro Ala Gly Arg Trp Leu Leu Ser Gln Cys Ser
         420                      425                      430
Glu Ala Glu Cys
         435 436
```

```
     <210> 1105
     <211> 113
     <212>Amino acid
     <213> Homo sapiens
```

```
     <400> 1105
Gly Ser Ala Ala Gly Gln Val Gln Gln Gln Gln Arg Arg His Gln
  1             5                      10                      15
Gln Gly Lys Val Thr Val Lys Tyr Asp Arg Lys Glu Leu Arg Lys Arg
             20                      25                      30
Leu Val Leu Glu Glu Trp Ile Val Glu Gln Leu Gly Gln Leu Tyr Gly
             35                      40                      45
Cys Glu Glu Glu Glu Met Pro Glu Val Glu Ile Asp Ile Asp Asp Leu
    50                      55                      60
Phe Asp Ala Tyr Ser Asp Glu Gln Arg Ala Ser Lys Leu Gln Glu Ala
65                      70                      75                      80
Leu Val Asp Cys Tyr Lys Pro Thr Glu Glu Phe Ile Lys Glu Leu Leu
```

```
                        85                    90                      95
Ser Arg Ile Arg Gly Met Arg Lys Leu Ser Pro Pro Gln Lys Lys Ser
                100                   105                   110
Val
113


        <210> 1106
        <211> 464
        <212>Amino acid
        <213> Homo sapiens




        <400> 1106
Ile Met Leu Asp Gly Arg Val Arg Trp Leu Thr Pro Val Ile Ser Ala
 1              5                   10                      15
Leu Trp Glu Ala Glu Met Glu Asp Val Ile Ala Arg Met Gln Asp Glu
            20                  25                  30
Lys Asn Gly Ile Pro Ile Arg Thr Val Lys Ser Phe Leu Ser Lys Ile
        35                  40                  45
Pro Ser Val Phe Ser Gly Ser Asp Ile Val Gln Trp Leu Ile Lys Asn
        50                  55                  60
Leu Thr Ile Glu Asp Pro Val Glu Ala Leu His Leu Gly Thr Leu Met
65                  70                  75                  80
Ala Ala His Gly Tyr Phe Phe Pro Ile Ser Asp His Val Leu Thr Leu
                85                  90                  95
Lys Asp Asp Gly Thr Phe Tyr Arg Phe Gln Thr Pro Tyr Phe Trp Pro
            100                 105                 110
Ser Asn Cys Trp Glu Pro Glu Asn Thr Asp Tyr Ala Val Tyr Leu Cys
            115                 120                 125
Lys Arg Thr Met Gln Asn Lys Ala Arg Leu Glu Leu Ala Asp Tyr Glu
        130                 135                 140
Ala Glu Ser Leu Ala Arg Leu Gln Arg Ala Phe Ala Arg Lys Trp Glu
145                 150                 155                 160
Phe Ile Phe Met Gln Ala Glu Ala Gln Ala Lys Val Asp Lys Lys Arg
                165                 170                 175
Asp Lys Ile Glu Arg Lys Ile Leu Asp Ser Gln Glu Arg Ala Phe Trp
            180                 185                 190
Asp Val His Arg Pro Val Pro Gly Cys Val Asn Thr Thr Glu Val Asp
            195                 200                 205
Ile Lys Lys Ser Ser Arg Met Arg Asn Pro His Lys Thr Arg Lys Ser
210                 215                 220
Val Tyr Gly Leu Gln Asn Asp Ile Arg Ser His Ser Pro Thr His Thr
225                 230                 235                 240
Pro Thr Pro Glu Thr Lys Pro Pro Thr Glu Asp Glu Leu Gln Gln Gln
                245                 250                 255
Ile Lys Tyr Trp Gln Ile Gln Leu Asp Arg His Arg Leu Lys Met Ser
            260                 265                 270
Lys Val Ala Asp Ser Leu Leu Ser Tyr Thr Glu Gln Tyr Leu Glu Tyr
        275                 280                 285
Asp Pro Phe Leu Leu Pro Pro Asp Pro Ser Asn Pro Trp Leu Ser Asp
        290                 295                 300
Asp Thr Thr Phe Trp Glu Leu Glu Ala Ser Lys Glu Pro Ser Gln Gln
305                 310                 315                 320
Arg Val Lys Arg Trp Gly Phe Gly Met Asp Glu Ala Leu Lys Asp Pro
                325                 330                 335
Val Gly Arg Glu Gln Phe Leu Lys Phe Leu Glu Ser Glu Phe Ser Ser
            340                 345                 350
Glu Asn Leu Arg Phe Trp Leu Ala Val Glu Asp Leu Lys Lys Arg Pro
            355                 360                 365
Ile Lys Glu Val Pro Ser Arg Val Gln Glu Ile Trp Gln Glu Phe Leu
```

```
         370                        375                        380
Ala Pro Gly Ala Pro Ser Ala Ile Asn Leu Asp Ser Lys Ser Tyr Asp
385                        390                        395                        400
Lys Thr Thr Gln Asn Val Lys Glu Pro Gly Arg Tyr Thr Phe Glu Asp
                    405                        410                        415
Ala Gln Glu His Ile Tyr Lys Leu Met Lys Ser Asp Ser Tyr Pro Arg
               . 420                        425                        430
Phe Ile Arg Ser Ser Ala Tyr Gln Glu Leu Leu Gln Ala Lys Lys Lys
               435                        440                        445
Gly Lys Ser Leu Thr Ser Lys Arg Leu Thr Ser Leu Ala Gln Ser Tyr
          450                        455                        460                        464
```

<210> 1107
<211> 153
<212>Amino acid
<213> Homo sapiens

<400> 1107
```
Gly Thr Arg Asp Tyr Pro Arg Ile Val Asn His Leu Asp His Thr Tyr
 1                  5                       10                        15
Val Thr Ala Pro Gln Ala Phe Met Met Phe Gln Tyr Phe Val Lys Val
                    20                       25                        30
Val Pro Thr Val Tyr Met Lys Val Asp Gly Glu Val Leu Thr Thr Asn
          35                       40                        45
Gln Ile Tyr Val Thr Arg His Glu Lys Ala Ala Tyr Val Leu Met Gly
     50                       55                        60
Asp Gln Gly Leu Pro Gly Val Phe Ile Leu Tyr Glu Leu Ser Pro Met
65                       70                        75                        80
Met Val Asn Leu Thr Glu Ile His Thr Phe Phe Ser Leu Phe Leu Thr
                    85                        90                        95
Ile Val Gly Ala Thr Ile Gly Gly Met Phe Phe Glu His Phe Val Ile
               100                      105                      110
Asn Tyr Leu Thr His Lys Trp Gly Leu Gly Phe Tyr Phe Lys Asn Glu
               115                      120                      125
Asn Ser Leu Gln Gly Gly His Arg Thr Leu Tyr Gly Val Asn Phe Phe
          130                      135                      140
Met Tyr Trp Ser Leu Arg Gly Gly Ser
145                      150                      153
```

<210> 1108
<211> 506
<212>Amino acid
<213> Homo sapiens

<400> 1108
```
Ser Val Trp Trp Asn Ser Gln Arg Gln Phe Val Val Arg Ala Trp Gly
 1                  5                       10                        15
Cys Ala Gly Pro Cys Gly Arg Ala Val Phe Leu Ala Phe Gly Leu Gly
               20                       25                        30
Leu Gly Leu Ile Glu Glu Lys Gln Ala Glu Ser Arg Arg Ala Val Ser
          35                       40                        45
Ala Cys Gln Glu Ile Gln Ala Ile Phe Thr Gln Lys Ser Lys Pro Gly
```

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```
          50                        55                        60
Pro Asp Pro Leu Asp Thr Arg Arg Leu Gln Gly Phe Arg Leu Glu Glu
65                        70                        75                        80
Tyr Leu Ile Gly Gln Ser Ile Gly Lys Gly Cys Ser Ala Ala Val Tyr
                85                        90                        95
Glu Ala Thr Met Pro Thr Leu Pro Gln Asn Leu Glu Val Thr Lys Ser
                100                       105                       110
Thr Gly Leu Leu Pro Gly Arg Gly Pro Gly Thr Ser Ala Pro Gly Glu
                115                       120                       125
Gly Gln Glu Arg Ala Pro Gly Ala Pro Ala Phe Pro Leu Ala Ile Lys
        130                       135                       140
Met Met Trp Asn Ile Ser Ala Gly Ser Ser Ser Glu Ala Ile Leu Asn
145                       150                       155                       160
Thr Met Ser Gln Glu Leu Val Pro Ala Ser Arg Val Ala Leu Ala Gly
                165                       170                       175
Glu Tyr Gly Ala Val Thr Tyr Arg Lys Ser Lys Arg Gly Pro Lys Gln
                180                       185                       190
Leu Ala Pro His Pro Asn Ile Ile Arg Val Leu Arg Ala Phe Thr Ser
        195                       200                       205
Ser Val Pro Leu Leu Pro Gly Ala Leu Val Asp Tyr Pro Asp Val Leu
        210                       215                       220
Pro Ser Arg Leu His Pro Glu Gly Leu Gly His Gly Arg Thr Leu Phe
225                       230                       235                       240
Leu Val Met Lys Asn Tyr Pro Cys Thr Leu Arg Gln Tyr Leu Cys Val
                245                       250                       255
Asn Thr Pro Ser Pro Arg Leu Ala Ala Met Met Leu Leu Gln Leu Leu
                260                       265                       270
Glu Gly Val Asp His Leu Val Gln Gln Gly Ile Ala His Arg Asp Leu
        275                       280                       285
Lys Ser Asp Asn Ile Leu Val Glu Leu Asp Pro Asp Gly Cys Pro Trp
        290                       295                       300
Leu Val Ile Ala Asp Phe Gly Cys Cys Leu Ala Asp Glu Ser Ile Gly
305                       310                       315                       320
Leu Gln Leu Pro Phe Ser Ser Trp Tyr Val Asp Arg Gly Gly Asn Gly
                325                       330                       335
Cys Leu Met Ala Pro Glu Val Ser Thr Ala Arg Pro Gly Pro Arg Ala
                340                       345                       350
Val Ile Asp Tyr Ser Lys Ala Asp Ala Trp Ala Val Gly Ala Ile Ala
        355                       360                       365
Tyr Glu Ile Phe Gly Leu Val Asn Pro Phe Tyr Gly Gln Gly Lys Ala
        370                       375                       380
His Leu Glu Ser Arg Ser Tyr Gln Glu Ala Gln Leu Pro Ala Leu Pro
385                       390                       395                       400
Glu Ser Val Pro Pro Asp Val Arg Gln Leu Val Arg Ala Leu Leu Gln
                405                       410                       415
Arg Glu Ala Ser Lys Arg Pro Ser Ala Arg Val Ala Ala Asn Val Leu
                420                       425                       430
His Leu Ser Leu Trp Gly Glu His Ile Leu Ala Leu Lys Asn Leu Lys
        435                       440                       445
Leu Asp Lys Met Val Gly Trp Leu Leu Gln Gln Ser Ala Ala Thr Leu
        450                       455                       460
Leu Ala Asn Arg Leu Thr Glu Lys Cys Cys Val Glu Thr Lys Met Lys
465                       470                       475                       480
Met Leu Phe Leu Ala Asn Leu Glu Cys Glu Thr Leu Cys Gln Ala Ala
                485                       490                       495
Leu Leu Leu Cys Ser Trp Arg Ala Ala Leu
        500                       505 506
```

```
<210> 1109
<211> 382
<212> Amino acid
<213> Homo sapiens
```

<400> 1109

Arg Pro Leu Leu Arg Leu Ala Glu Leu Pro Asp His Cys Tyr Arg Met
1   5   10   15
Asn Ser Ser Pro Ala Gly Thr Pro Ser Pro Gln Pro Ser Arg Ala Asn
            20   25   30
Gly Asn Ile Asn Leu Gly Pro Ser Ala Asn Pro Asn Ala Gln Pro Thr
        35   40   45
Asp Phe Asp Phe Leu Lys Val Ile Gly Lys Gly Asn Tyr Gly Lys Val
    50   55   60
Leu Leu Ala Lys Arg Lys Ser Asp Gly Ala Phe Tyr Ala Val Lys Val
65   70   75   80
Leu Gln Lys Lys Ser Ile Leu Lys Lys Lys Glu Gln Ser His Ile Met
                85   90   95
Ala Glu Arg Ser Val Leu Leu Lys Asn Val Arg His Pro Phe Leu Val
            100   105   110
Gly Leu Arg Tyr Ser Phe Gln Thr Pro Glu Lys Leu Tyr Phe Val Leu
        115   120   125
Asp Tyr Val Asn Gly Gly Glu Leu Phe Phe His Leu Gln Arg Glu Arg
    130   135   140
Arg Phe Leu Glu Pro Arg Ala Arg Phe Tyr Ala Ala Glu Val Ala Ser
145   150   155   160
Ala Ile Gly Tyr Leu His Ser Leu Asn Ile Ile Tyr Arg Asp Leu Lys
                165   170   175
Pro Glu Asn Ile Leu Leu Asp Cys Gln Gly His Val Val Leu Thr Asp
            180   185   190
Phe Gly Leu Cys Lys Glu Gly Val Glu Pro Glu Asp Thr Thr Ser Thr
        195   200   205
Phe Cys Gly Thr Pro Glu Tyr Leu Ala Pro Glu Val Leu Arg Lys Glu
    210   215   220
Pro Tyr Asp Arg Ala Val Asp Trp Trp Cys Leu Gly Ala Val Leu Tyr
225   230   235   240
Glu Met Leu His Gly Leu Pro Pro Phe Tyr Ser Gln Asp Val Ser Gln
                245   250   255
Met Tyr Glu Asn Ile Leu His Gln Pro Leu Gln Ile Pro Gly Gly Arg
            260   265   270
Thr Val Ala Ala Cys Asp Leu Leu Gln Ser Leu Leu His Lys Asp Gln
        275   280   285
Arg Gln Arg Leu Gly Ser Lys Ala Asp Phe Leu Glu Ile Lys Asn His
    290   295   300
Val Phe Phe Ser Pro Ile Asn Trp Asp Asp Leu Tyr His Lys Arg Leu
305   310   315   320
Thr Pro Pro Phe Asn Pro Asn Val Thr Gly Pro Ala Asp Leu Lys His
            325   330   335
Phe Asp Pro Glu Phe Thr Gln Glu Ala Val Ser Lys Ser Ile Gly Cys
        340   345   350
Thr Pro Asp Thr Val Ala Ser Ser Ser Gly Ala Ser Ser Ala Phe Leu
    355   360   365
Gly Phe Ser Tyr Ala Pro Glu Asp Asp Asp Ile Leu Asp Cys
370   375   380   382

<210> 1110
<211> 535
<212> Amino acid
<213> Homo sapiens

<400> 1110

```
Arg Pro Gln Thr Leu Lys Gly His Gln Glu Lys Ile Arg Gln Arg Gln
1               5               10              15
Ser Ile Leu Pro Pro Pro Gln Gly Pro Ala Pro Ile Pro Phe Gln His
            20              25              30
Arg Gly Gly Asp Ser Pro Glu Ala Lys Asn Arg Val Gly Pro Gln Val
        35              40                      45
Pro Leu Ser Glu Pro Gly Phe Arg Arg Arg Glu Ser Gln Glu Glu Pro
    50              55                      60
Arg Ala Val Leu Ala Gln Lys Ile Glu Lys Glu Thr Gln Ile Leu Asn
65              70              75                      80
Cys Ala Leu Asp Asp Ile Glu Trp Phe Val Ala Arg Leu Gln Lys Ala
                85                      90                      95
Ala Glu Ala Phe Lys Gln Leu Asn Gln Arg Lys Lys Gly Lys Lys Lys
        100             105             110
Gly Lys Lys Ala Pro Ala Glu Gly Val Leu Thr Leu Arg Ala Arg Pro
    115             120             125
Pro Ser Glu Gly Glu Phe Ile Asp Cys Phe Gln Lys Ile Lys Leu Ala
130             135             140
Ile Asn Leu Leu Ala Lys Leu Gln Lys His Ile Gln Asn Pro Ser Ala
145             150             155             160
Ala Glu Leu Val His Phe Leu Phe Gly Pro Leu Asp Leu Ile Val Asn
                165             170             175
Thr Cys Ser Gly Pro Asp Ile Ala Arg Ser Val Ser Cys Pro Leu Leu
        180             185             190
Ser Arg Asp Ala Val Asp Phe Leu Arg Gly His Leu Val Pro Lys Glu
    195             200             205
Met Ser Leu Trp Glu Ser Leu Gly Glu Ser Trp Met Arg Pro Arg Ser
210             215             220
Glu Trp Pro Arg Glu Pro Gln Val Pro Leu Tyr Val Pro Lys Phe His
225             230             235             240
Ser Gly Trp Glu Pro Pro Val Asp Val Leu Gln Glu Ala Pro Trp Glu
            245             250             255
Val Glu Gly Leu Ala Ser Ala Pro Ile Glu Glu Val Ser Pro Val Ser
        260             265             270
Arg Gln Ser Ile Arg Asn Ser Gln Lys His Ser Pro Thr Ser Glu Pro
    275             280             285
Thr Pro Pro Gly Asp Ala Leu Pro Pro Val Ser Ser Pro His Thr His
    290             295             300
Arg Gly Tyr Gln Pro Thr Pro Ala Met Ala Lys Tyr Val Lys Ile Leu
305             310             315             320
Tyr Asp Phe Thr Ala Arg Asn Ala Asn Glu Leu Ser Val Leu Lys Asp
            325             330             335
Glu Val Leu Glu Val Leu Glu Asp Gly Arg Gln Trp Trp Lys Leu Arg
        340             345             350
Ser Arg Ser Gly Gln Ala Gly Tyr Val Pro Cys Asn Ile Leu Gly Glu
    355             360             365
Ala Arg Pro Glu Asp Ala Gly Ala Pro Phe Glu Gln Ala Gly Gln Lys
    370             375             380
Tyr Trp Gly Pro Ala Ser Pro Thr His Lys Leu Pro Pro Ser Phe Pro
385             390             395             400
Gly Asn Lys Asp Glu Leu Met Gln His Met Asp Glu Val Asn Asp Glu
            405             410             415
Leu Ile Arg Lys Ile Ser Asn Ile Arg Ala Gln Pro Gln Arg His Phe
        420             425             430
Arg Val Glu Arg Ser Gln Pro Val Ser Gln Pro Leu Thr Tyr Glu Ser
        435             440             445
Gly Pro Asp Glu Val Arg Ala Trp Leu Glu Ala Lys Ala Phe Ser Pro
450             455             460
Arg Ile Val Glu Asn Leu Gly Ile Leu Thr Gly Pro Gln Leu Phe Ser
465             470             475             480
Leu Asn Lys Glu Glu Leu Lys Lys Val Cys Gly Glu Glu Gly Val Arg
            485             490             495
Val Tyr Ser Gln Leu Thr Met Gln Lys Ala Phe Leu Glu Lys Gln Gln
```

```
                    500                  505                  510
Ser Gly Ser Glu Leu Glu Glu Leu Met Asn Lys Phe His Ser Met Asn
              515                  520              :   525
Gln Arg Arg Gly Glu Asp Ser
              530              535


        <210> 1111
        <211> 346
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(346)
        <223> X = any amino acid or stop code




        <400> 1111
Ala Trp His Glu Gly Leu Val Ser Ser Pro Ala Ile Gly Ala Tyr Leu
 1               5                   10                  15
Ser Ala Ser Tyr Gly Asp Ser Leu Val Val Leu Val Ala Thr Val Val
              20                  25                  30
Ala Leu Leu Asp Ile Cys Phe Ile Leu Val Ala Val Pro Glu Ser Leu
              35                  40                  45
Pro Glu Lys Met Arg Pro Val Ser Trp Gly Ala Gln Ile Ser Trp Lys
        50                  55                  60
Gln Ala Asp Pro Phe Ala Ser Leu Lys Lys Val Gly Lys Asp Ser Thr
65                  70                  75                  80
Val Leu Leu Ile Cys Ile Thr Val Cys Leu Ser Tyr Leu Pro Glu Ala
                  85                  90                  95
Gly Gln Tyr Ser Ser Phe Phe Leu Tyr Leu Arg Gln Val Ile Gly Phe
              100                 105                 110
Gly Ser Val Lys Ile Ala Ala Phe Ile Ala Met Val Gly Ile Leu Ser
              115                 120                 125
Ile Val Ala Gln Thr Ala Phe Leu Ser Ile Leu Met Arg Ser Leu Gly
    130                 135                 140
Asn Lys Asn Thr Val Leu Leu Gly Leu Gly Phe Gln Met Leu Gln Leu
145                 150                 155                 160
Ala Trp Tyr Gly Phe Gly Ser Gln Ala Trp Met Met Trp Ala Ala Gly
                  165                 170                 175
Thr Val Ala Ala Met Ser Ser Ile Thr Phe Pro Ala Ile Ser Ala Leu
              180                 185                 190
Val Ser Arg Asn Ala Glu Ser Asp Gln Gln Gly Val Ala Gln Gly Ile
              195                 200                 205
Ile Thr Gly Ile Arg Gly Leu Cys Asn Gly Leu Gly Pro Ala Leu Tyr
    210                 215                 220
Gly Phe Ile Phe Tyr Met Phe His Val Glu Leu Thr Glu Leu Gly Pro
225                 230                 235                 240
Lys Leu Asn Ser Asn Asn Val Pro Leu Gln Gly Ala Val Ile Pro Gly
              245                 250                 255
Pro Pro Phe Leu Phe Gly Ala Cys Ile Val Leu Met Ser Phe Leu Ala
              260                 265                 270
Ala Leu Phe Ile Pro Glu Tyr Ser Lys Ala Ser Gly Val Gln Lys His
              275                 280                 285
Ser Asn Ser Ser Ser Gly Ser Leu Thr Asn Thr Pro Glu Arg Gly Ser
    290                 295                 300
Asp Glu Asp Ile Glu Pro Leu Leu Gln Asp Ser Ser Ile Trp Glu Leu
305                 310                 315                 320
Ser Ser Phe Glu Glu Pro Gly Asn Gln Cys Thr Glu Leu Xaa Thr Arg
              325                 330                 335
```

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```
Gln Lys Val Gly Phe Cys Ile Arg His Leu
        340              345 346
```

```
<210> 1112
<211> 647
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1112
Met Ala Ala Gly Leu Ala Thr Trp Leu Pro Phe Ala Arg Ala Ala Ala
1                5                  10                  15
Val Gly Trp Leu Pro Leu Ala Gln Gln Pro Leu Pro Pro Ala Pro Gly
            20              25              30
Val Lys Ala Ser Arg Gly Asp Glu Val Leu Val Val Asn Val Ser Gly
        35              40              45
Arg Arg Phe Glu Thr Trp Lys Asn Thr Leu Asp Arg Tyr Pro Asp Thr
    50              55              60
Leu Leu Gly Ser Ser Glu Lys Glu Phe Phe Tyr Asp Ala Asp Ser Gly
65              70              75              80
Glu Tyr Phe Phe Asp Arg Asp Pro Asp Met Phe Arg His Val Leu Asn
                85              90              95
Phe Tyr Arg Thr Gly Arg Leu His Cys Pro Arg Gln Glu Cys Ile Gln
            100             105             110
Ala Phe Asp Glu Glu Leu Ala Phe Tyr Gly Leu Val Pro Glu Leu Val
        115             120             125
Gly Asp Cys Cys Leu Glu Glu Tyr Arg Asp Arg Lys Lys Glu Asn Ala
    130             135             140
Glu Arg Leu Ala Glu Asp Glu Glu Ala Glu Gln Ala Gly Asp Gly Pro
145             150             155             160
Ala Leu Pro Ala Gly Ser Ser Leu Arg Gln Arg Leu Trp Arg Ala Phe
            165             170             175
Glu Asn Pro His Thr Ser Thr Ala Ala Leu Val Phe Tyr Tyr Val Thr
            180             185             190
Gly Phe Phe Ile Ala Val Ser Val Ile Ala Asn Val Val Glu Thr Ile
    195             200             205
Pro Cys Arg Gly Ser Ala Arg Arg Ser Ser Arg Glu Gln Pro Cys Gly
210             215             220
Glu Arg Phe Pro Gln Ala Phe Phe Cys Met Asp Thr Ala Cys Val Leu
225             230             235             240
Ile Phe Thr Gly Glu Tyr Leu Leu Arg Leu Phe Ala Ala Pro Ser Arg
            245             250             255
Cys Arg Phe Leu Arg Ser Val Met Ser Leu Ile Asp Val Val Ala Ile
        260             265             270
Leu Pro Tyr Tyr Ile Gly Leu Leu Val Pro Lys Asn Asp Asp Val Ser
    275             280             285
Gly Ala Phe Val Thr Leu Arg Val Phe Arg Val Phe Arg Ile Phe Lys
290             295             300
Phe Ser Arg His Ser Gln Gly Leu Arg Ile Leu Gly Tyr Thr Leu Lys
305             310             315             320
Ser Cys Ala Ser Glu Leu Gly Phe Leu Leu Phe Ser Leu Thr Met Ala
            325             330             335
Ile Ile Ile Phe Ala Thr Val Met Phe Tyr Ala Glu Lys Gly Thr Asn
            340             345             350
Lys Thr Asn Phe Thr Ser Ile Pro Ala Ala Phe Trp Tyr Thr Ile Val
    355             360             365
Thr Met Thr Thr Leu Gly Tyr Gly Asp Met Val Pro Ser Thr Ile Ala
370             375             380
Gly Lys Ile Phe Gly Ser Ile Cys Ser Leu Ser Gly Val Leu Val Ile
385             390             395             400
```

```
Ala Leu Pro Val Pro Val Ile Val Ser Asn Phe Ser Arg Ile Tyr His
            405             410                 415
Gln Asn Gln Arg Ala Asp Lys Arg Arg Ala Gln Gln Lys Val Arg Leu
            420             425                 430
Ala Arg Ile Arg Leu Ala Lys Ser Gly Thr Thr Asn Ala Phe Leu Gln
            435             440                 445
Tyr Lys Gln Asn Gly Gly Leu Glu Asp Ser Gly Ser Gly Glu Glu Gln
        450             455                 460
Ala Val Cys Val Arg Asn Arg Ser Ala Phe Glu Gln Gln His His His
465             470                 475                     480
Leu Leu His Cys Leu Glu Lys Thr Thr Cys His Glu Phe Thr Asp Glu
            485             490                     495
Leu Thr Phe Ser Glu Ala Leu Gly Ala Val Ser Pro Gly Gly Arg Thr
            500             505                 510
Ser Arg Ser Thr Ser Val Ser Ser Gln Pro Val Gly Pro Gly Ser Leu
        515             520                 525
Leu Ser Ser Cys Cys Pro Arg Arg Ala Lys Arg Arg Ala Ile Arg Leu
        530             535                 540
Ala Asn Ser Thr Ala Ser Val Ser Arg Gly Ser Met Gln Glu Leu Asp
545             550             555                     560
Met Leu Ala Gly Leu Arg Arg Ser His Ala Pro Gln Ser Arg Ser Ser
            565             570                 575
Leu Asn Ala Lys Pro His Asp Ser Leu Asp Leu Asn Cys Asp Ser Gly
            580             585                 590
Asp Phe Val Ala Ala Ile Ile Ser Ile Pro Thr Pro Pro Ala Asn Thr
            595             600                 605
Pro Asp Glu Ser Gln Pro Ser Ser Pro Gly Gly Gly Gly Arg Ala Gly
            610             615                 620
Ser Thr Leu Arg Asn Ser Ser Leu Gly Thr Pro Cys Leu Phe Pro Glu
625             630                 635                     640
Thr Val Lys Ile Ser Ser Leu
            645     647
```

```
    <210> 1113
    <211> 220
    <212>Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(220)
    <223> X = any amino acid or stop code
```

```
    <400> 1113
Gly Trp Gly Lys Pro Phe Lys Asp Trp Thr Thr Gly Gly Gln Asp Thr
1             5               10              15
Gly Gly Glu Pro Ala Leu Leu Val Gly Ala Gly Glu Gly Arg Ala Pro
            20              25              30
Arg Leu Asn Cys Pro Ser Gly Gln Ile Arg Ser Pro Gly Pro Gly Asp
        35              40                  45
Leu Ser Ile Tyr Asp Asn Trp Ile Arg Tyr Phe Asn Arg Ser Ser Pro
    50              55              60
Val Tyr Gly Leu Val Pro Arg Ser Lys Thr Ser Ala Arg Ile Tyr Pro
65              70              75                  80
Thr Tyr His Thr Ala Phe Asp Thr Phe Asp Tyr Val Asp Lys Phe Leu
            85              90                  95
Asp Pro Gly Glu Glu Gly Asp Lys Gly His Pro Glu Thr Arg Thr Gly
            100             105                 110
Glu Ala Glu Asp Xaa Ala Leu Ala Leu Ser Pro Cys Arg Arg Phe Ser
```

640

```
                115                        120                       125
Ser His Gln Ala Val Ala Arg Thr Ala Gly Ser Val Ile Leu Arg Leu
        130                        135                       140
Ser Asp Ser Phe Phe Leu Pro Leu Lys Val Ser Asp Tyr Ser Glu Thr
145                        150                       155                       160
Leu Arg Ser Phe Leu Gln Ala Ala Gln Gln Asp Leu Gly Ala Leu Leu
                    165                       170                       175
Glu Gln His Ser Ile Ser Leu Gly Pro Leu Val Thr Ala Val Glu Lys
            180                        185                       190
Phe Glu Ala Glu Ala Ala Ala Leu Gly Gln Arg Ile Ser Thr Leu Gln
        195                        200                       205
Lys Gly Ser Pro Asp Pro Leu Gln Val Arg Met Leu
    210                        215                       220
```

<210> 1114
<211> 382
<212> Amino acid
<213> Homo sapiens

<400> 1114

```
Gly Ile Arg Gly Gly Gly Ser Leu Ala Ser Gly Gly Pro Gly Pro Gly
1               5                   10                      15
His Ala Ser Leu Ser Gln Arg Leu Arg Leu Tyr Leu Ala Asp Ser Trp
            20                   25                      30
Asn Gln Cys Asp Leu Val Ala Leu Thr Cys Phe Leu Leu Gly Val Gly
        35                   40                      45
Cys Arg Leu Thr Pro Gly Leu Tyr His Leu Gly Arg Thr Val Leu Cys
    50                   55                      60
Ile Asp Phe Met Val Phe Thr Val Arg Leu Leu His Ile Phe Thr Val
65              70                   75                      80
Asn Lys Gln Leu Gly Pro Lys Ile Val Ile Val Ser Lys Met Met Lys
                85                   90                      95
Asp Val Phe Phe Phe Leu Phe Phe Leu Gly Val Trp Leu Val Ala Tyr
            100                  105                     110
Gly Val Ala Thr Glu Gly Leu Leu Arg Pro Arg Asp Ser Asp Phe Pro
        115                  120                     125
Ser Ile Leu Arg Arg Val Phe Tyr Arg Pro Tyr Leu Gln Ile Phe Gly
    130                  135                     140
Gln Ile Pro Gln Glu Asp Met Asp Val Ala Leu Met Glu His Ser Asn
145                  150                     155                     160
Cys Ser Ser Glu Pro Gly Phe Trp Ala His Pro Pro Gly Ala Gln Ala
            165                  170                     175
Gly Thr Cys Val Ser Gln Tyr Ala Asn Trp Leu Val Val Leu Leu Leu
        180                  185                     190
Val Ile Phe Leu Leu Val Ala Asn Ile Leu Leu Val Asn Leu Leu Ile
    195                  200                     205
Ala Met Phe Ser Tyr Thr Phe Gly Lys Val Gln Gly Asn Ser Asp Leu
    210                  215                     220
Tyr Trp Lys Ala Gln Arg Tyr Arg Leu Ile Arg Glu Phe His Ser Arg
225                  230                     235                     240
Pro Ala Leu Ala Pro Pro Phe Ile Val Ile Ser His Leu Arg Leu Leu
            245                  250                     255
Leu Arg Gln Leu Cys Arg Arg Pro Arg Ser Pro Gln Pro Ser Ser Pro
        260                  265                     270
Ala Leu Glu His Phe Arg Val Tyr Leu Ser Lys Glu Ala Glu Arg Lys
        275                  280                     285
Leu Leu Thr Trp Glu Ser Val His Lys Glu Asn Phe Leu Leu Ala Arg
    290                  295                     300
Ala Arg Asp Lys Arg Glu Ser Asp Ser Glu Arg Leu Lys Arg Thr Ser
```

```
305                    310              ·315              320
Gln Lys Val Asp Leu Ala Leu Lys Gln Leu Gly His Ile Arg Glu Tyr
                325              330              335
Glu Gln Arg Leu Lys Val Leu Glu Arg Glu Val Gln Gln Cys Ser Arg
                340              345              350
Val Leu Gly Trp Val Ala Glu Ala Leu Ser Arg Ser Ala Leu Leu Pro
                355              360              365
Pro Gly Gly Pro Pro Pro Asp Leu Pro Gly Ser Lys Asp
    370              375              380   382
```

```
<210> 1115
<211> 109
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1115
Leu Ile Lys Leu Cys Lys Ser Lys Ala Lys Ser Cys Glu Asn Asp Leu
  1             5              10              15
Glu Met Gly Met Leu Asn Ser Lys Phe Lys Lys Thr Arg Tyr Gln Ala
              20              25              30
Gly Met Arg Asn Ser Glu Asn Leu Thr Ala Asn Asn Thr Leu Ser Lys
          35              40              45
Pro Thr Arg Tyr Gln Gly Glu Leu Lys Glu Ile Lys Gln Asp Ile Ser
    50              55              60
Ser Leu Arg Tyr Glu Leu Leu Glu Glu Lys Ser Gln Ala Thr Gly Glu
  65              70              75              80
Leu Ala Asp Leu Ile Gln Gln Leu Ser Glu Lys Phe Gly Lys Asn Leu
              85              90              95
Asn Lys Asp His Leu Arg Val Asn Lys Gly Lys Asp Ile
          100             105             109
```

```
<210> 1116
<211> 679
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1116
Leu Pro Leu Leu His Ala Gly Phe Asn Arg Arg Phe Met Glu Asn Ser
  1             5              10              15
Ser Ile Ile Ala Cys Tyr Asn Glu Leu Ile Gln Ile Glu His Gly Glu
              20              25              30
Val Arg Ser Gln Phe Lys Leu Arg Ala Cys Asn Ser Val Phe Thr Ala
          35              40              45
Leu Asp His Cys His Glu Ala Ile Glu Ile Thr Ser Asp Asp His Val
    50              55              60
Ile Gln Tyr Val Asn Pro Ala Phe Glu Arg Met Met Gly Tyr His Lys
  65              70              75              80
Gly Glu Leu Leu Gly Lys Glu Leu Ala Asp Leu Pro Lys Ser Asp Lys
              85              90              95
Asn Arg Ala Asp Leu Leu Asp Thr Ile Asn Thr Cys Ile Lys Lys Gly
          100             105             110
Lys Glu Trp Gln Gly Val Tyr Tyr Ala Arg Arg Lys Ser Gly Asp Ser
    115             120             125
Ile Gln Gln His Val Lys Ile Thr Pro Val Ile Gly Gln Gly Gly Lys
```

```
          130                      135                      140
Ile Arg His Phe Val Ser Leu Lys Lys Leu Cys Cys Thr Thr Asp Asn
145                      150                      155                      160
Asn Lys Gln Ile His Lys Ile His Arg Asp Ser Gly Asp Asn Ser Gln
                   165                      170                      175
Thr Glu Pro His Ser Phe Arg Tyr Lys Asn Arg Arg Lys Glu Ser Ile
               180                      185                      190
Asp Val Lys Ser Ile Ser Ser Arg Gly Ser Asp Ala Pro Ser Leu Gln
           195                      200                      205
Asn Arg Arg Tyr Pro Ser Met Ala Arg Ile His Ser Met Thr Ile Glu
       210                      215                      220
Ala Pro Ile Thr Lys Val Ile Asn Ile Ile Asn Ala Ala Gln Glu Asn
225                      230                      235                      240
Ser Pro Val Thr Val Ala Glu Ala Leu Asp Arg Val Leu Glu Ile Leu
                   245                      250                      255
Arg Thr Thr Glu Leu Tyr Ser Pro Gln Leu Gly Thr Lys Asp Glu Asp
               260                      265                      270
Pro His Thr Ser Asp Leu Val Gly Gly Leu Met Thr Asp Gly Leu Arg
           275                      280                      285
Arg Leu Ser Gly Asn Glu Tyr Val Phe Thr Lys Asn Val His Gln Ser
       290                      295                      300
His Ser His Leu Ala Met Pro Ile Thr Ile Asn Asp Val Pro Pro Cys
305                      310                      315                      320
Ile Ser Gln Leu Leu Asp Asn Glu Glu Ser Trp Asp Phe Asn Ile Phe
                   325                      330                      335
Glu Leu Glu Ala Ile Thr His Lys Arg Pro Leu Val Tyr Leu Gly Leu
               340                      345                      350
Lys Val Phe Ser Arg Phe Gly Val Cys Glu Phe Leu Asn Cys Ser Glu
           355                      360                      365
Thr Thr Leu Arg Ala Trp Phe Gln Val Ile Glu Ala Asn Tyr His Ser
       370                      375                      380
Ser Asn Ala Tyr His Asn Ser Thr His Ala Ala Asp Val Leu His Ala
385                      390                      395                      400
Thr Ala Phe Phe Leu Gly Lys Glu Arg Val Lys Gly Ser Leu Asp Gln
                   405                      410                      415
Leu Asp Glu Val Ala Ala Leu Ile Ala Ala Thr Val His Asp Val Asp
               420                      425                      430
His Pro Gly Arg Thr Asn Ser Phe Leu Cys Asn Ala Gly Ser Glu Leu
           435                      440                      445
Ala Val Leu Tyr Asn Asp Thr Ala Val Leu Glu Ser His His Thr Ala
       450                      455                      460
Leu Ala Phe Gln Leu Thr Val Lys Asp Thr Lys Cys Asn Ile Phe Lys
465                      470                      475                      480
Asn Ile Asp Arg Gly Asn His Tyr Arg Thr Leu Arg Gln Ala Ile Ile
                   485                      490                      495
Asp Met Val Leu Ala Thr Glu Met Thr Lys His Phe Glu His Val Asn
               500                      505                      510
Lys Phe Val Asn Ser Ile Asn Lys Pro Met Ala Ala Glu Ile Glu Gly
           515                      520                      525
Ser Asp Cys Glu Cys Asn Pro Ala Gly Lys Asn Phe Pro Glu Asn Gln
       530                      535                      540
Ile Leu Ile Lys Arg Met Met Ile Lys Cys Ala Asp Val Ala Asn Pro
545                      550                      555                      560
Cys Arg Pro Leu Asp Leu Cys Ile Glu Trp Ala Gly Arg Ile Ser Glu
                   565                      570                      575
Glu Tyr Phe Ala Gln Thr Asp Glu Glu Lys Arg Gln Gly Leu Pro Val
               580                      585                      590
Val Met Pro Val Phe Asp Arg Asn Thr Cys Ser Ile Pro Lys Ser Gln
           595                      600                      605
Ile Ser Phe Ile Asp Tyr Phe Ile Thr Asp Met Phe Asp Ala Trp Asp
       610                      615                      620
Ala Phe Ala His Leu Pro Ala Leu Met Gln His Leu Ala Asp Asn Tyr
625                      630                      635                      640
Lys His Trp Lys Thr Leu Asp Asp Leu Lys Cys Lys Ser Leu Arg Leu
```

```
                        645                   650                      655
Pro Ser Asp Arg Leu Lys Pro Ser His Arg Gly Gly Leu Leu Thr Asp
            660                   665                      670
Lys Gly His Cys Glu Ser Gln
            675             679


        <210> 1117
        <211> 1193
        <212> Amino acid
        <213> Homo sapiens




        <400> 1117
Ala Phe Leu Ser Lys Val Glu Glu Asp Asp Tyr Pro Ser Glu Glu Leu
  1               5                   10                      15
Leu Glu Asp Glu Asn Ala Ile Asn Ala Lys Arg Ser Lys Glu Lys Asn
            20                  25                      30
Pro Gly Asn Gln Gly Arg Gln Phe Asp Val Asn Leu Gln Val Pro Asp
        35                  40                      45
Arg Ala Val Leu Gly Thr Ile His Pro Asp Pro Glu Ile Glu Glu Ser
    50                  55                      60
Lys Gln Glu Thr Ser Met Ile Leu Asp Ser Glu Lys Thr Ser Glu Thr
 65                  70                      75                      80
Ala Ala Lys Gly Val Asn Thr Gly Gly Arg Glu Pro Asn Thr Met Val
            85                  90                      95
Glu Lys Glu Arg Pro Leu Ala Asp Lys Lys Ala Gln Arg Pro Phe Glu
            100                 105                     110
Arg Ser Asp Phe Ser Asp Ser Ile Lys Ile Gln Thr Pro Glu Leu Gly
        115                 120                     125
Glu Val Phe Gln Asn Lys Asp Ser Asp Tyr Leu Lys Asn Asp Asn Pro
    130                 135                     140
Glu Glu His Leu Lys Thr Ser Gly Leu Ala Gly Glu Pro Glu Gly Glu
145                 150                     155                     160
Leu Ser Lys Glu Asp His Glu Asn Thr Glu Lys Tyr Met Gly Thr Glu
            165                 170                     175
Ser Gln Gly Ser Ala Ala Ala Glu Pro Glu Asp Asp Ser Phe His Trp
            180                 185                     190
Thr Pro His Thr Ser Val Glu Pro Gly His Ser Asp Lys Arg Glu Asp
        195                 200                     205
Leu Leu Ile Ile Ser Ser Phe Phe Lys Glu Gln Gln Ser Leu Gln Arg
    210                 215                     220
Phe Gln Lys Tyr Phe Asn Val His Glu Leu Glu Ala Leu Leu Gln Glu
225                 230                     235                     240
Met Ser Ser Lys Leu Lys Ser Ala Gln Gln Glu Ser Leu Pro Tyr Asn
            245                 250                     255
Met Glu Lys Val Leu Asp Lys Val Phe Arg Ala Ser Glu Ser Gln Ile
            260                 265                     270
Leu Ser Ile Ala Glu Lys Met Leu Asp Thr Arg Val Ala Glu Asn Arg
        275                 280                     285
Asp Leu Gly Met Asn Glu Asn Asn Ile Phe Glu Glu Ala Ala Val Leu
    290                 295                     300
Asp Asp Ile Gln Asp Leu Ile Tyr Phe Val Arg Tyr Lys His Ser Thr
305                 310                     315                     320
Ala Glu Glu Thr Ala Thr Leu Val Met Ala Pro Pro Leu Glu Glu Gly
            325                 330                     335
Leu Gly Gly Ala Met Glu Glu Met Gln Pro Leu His Glu Asp Asn Phe
        340                 345                     350
Ser Arg Glu Lys Thr Ala Glu Leu Asn Val Gln Val Pro Glu Glu Pro
        355                 360                     365
Thr His Leu Asp Gln Arg Val Ile Gly Asp Thr His Ala Ser Glu Val
```

```
              370                    375                    380
Ser Gln Lys Pro Asn Thr Glu Lys Asp Leu Asp Pro Gly Pro Val Thr
385                    390                    395                    400
Thr Glu Asp Thr Pro Met Asp Ala Ile Asp Ala Asn Lys Gln Pro Glu
                       405                    410                    415
Thr Ala Ala Glu Glu Pro Ala Ser Val Thr Pro Leu Glu Asn Ala Ile
                  420                    425                    430
Leu Leu Ile Tyr Ser Phe Met Phe Tyr Leu Thr Lys Ser Leu Val Ala
             435                    440                    445
Thr Leu Pro Asp Asp Val Gln Pro Gly Pro Asp Phe Tyr Gly Leu Pro
        450                    455                    460
Trp Lys Pro Val Phe Ile Thr Ala Phe Leu Gly Ile Ala Ser Phe Ala
465                    470                    475                    480
Ile Phe Leu Trp Arg Thr Val Leu Val Val Lys Asp Arg Val Tyr Gln
                  485                    490                    495
Val Thr Glu Gln Gln Ile Ser Glu Lys Leu Lys Thr Ile Met Lys Glu
             500                    505                    510
Asn Thr Glu Leu Val Gln Lys Leu Ser Asn Tyr Glu Gln Lys Ile Lys
             515                    520                    525
Glu Ser Lys Lys His Val Gln Glu Thr Arg Lys Gln Asn Met Ile Leu
        530                    535                    540
Ser Asp Glu Ala Ile Lys Tyr Lys Asp Lys Ile Lys Thr Leu Glu Lys
545                    550                    555                    560
Asn Gln Glu Ile Leu Asp Asp Thr Ala Lys Asn Leu Arg Val Met Leu
                  565                    570                    575
Glu Ser Glu Arg Glu Gln Asn Val Lys Asn Gln Asp Leu Ile Ser Glu
             580                    585                    590
Asn Lys Lys Ser Ile Glu Lys Leu Lys Asp Val Ile Ser Met Asn Ala
             595                    600                    605
Ser Glu Phe Ser Glu Val Gln Ile Ala Leu Asn Glu Ala Lys Leu Ser
        610                    615                    620
Glu Glu Lys Val Lys Ser Glu Cys His Arg Val Gln Glu Glu Asn Ala
625                    630                    635                    640
Arg Leu Lys Lys Lys Lys Glu Gln Leu Gln Gln Glu Ile Glu Asp Trp
                  645                    650                    655
Ser Lys Leu His Ala Glu Leu Ser Glu Gln Ile Lys Ser Phe Glu Lys
             660                    665                    670
Ser Gln Lys Asp Leu Glu Val Ala Leu Thr His Lys Asp Asp Asn Ile
             675                    680                    685
Asn Ala Leu Thr Asn Cys Ile Thr Gln Leu Asn Leu Leu Glu Cys Glu
        690                    695                    700
Ser Glu Ser Glu Gly Gln Asn Lys Gly Gly Asn Asp Ser Asp Glu Leu
705                    710                    715                    720
Ala Asn Gly Glu Val Gly Gly Asp Arg Asn Glu Lys Met Lys Asn Gln
                  725                    730                    735
Ile Lys Gln Met Met Asp Val Ser Arg Thr Gln Thr Ala Ile Ser Val
             740                    745                    750
Val Glu Glu Asp Leu Lys Leu Leu Gln Leu Lys Leu Arg Ala Ser Val
             755                    760                    765
Ser Thr Lys Cys Asn Leu Glu Asp Gln Val Lys Lys Leu Glu Asp Asp
        770                    775                    780
Arg Asn Ser Leu Gln Ala Ala Lys Ala Gly Leu Glu Asp Glu Cys Lys
785                    790                    795                    800
Thr Leu Arg Gln Lys Val Glu Ile Leu Asn Glu Leu Tyr Gln Gln Lys
                  805                    810                    815
Glu Met Ala Leu Gln Lys Lys Leu Ser Gln Glu Glu Tyr Glu Arg Gln
             820                    825                    830
Glu Arg Glu His Arg Leu Ser Ala Ala Asp Glu Lys Ala Val Ser Ala
        835                    840                    845
Ala Glu Val Lys Thr Tyr Lys Arg Arg Ile Glu Glu Met Glu Asp
        850                    855                    860
Glu Leu Gln Lys Thr Glu Arg Ser Phe Lys Asn Gln Ile Ala Thr His
865                    870                    875                    880
Glu Lys Lys Ala His Glu Asn Trp Leu Lys Ala Arg Ala Ala Glu Arg
```

645

```
                885                     890                     895
Ala Ile Ala Glu Glu Lys Arg Glu Ala Ala Asn Leu Arg His Lys Leu
            900                     905                     910
Leu Asp Leu Thr Gln Lys Met Ala Met Leu Gln Glu Glu Pro Val Ile
            915                     920                     925
Val Lys Pro Met Pro Gly Lys Pro Asn Thr Gln Asn Pro Pro Arg Arg
        930                     935                     940
Gly Pro Leu Ser Gln Asn Gly Ser Phe Gly Pro Ser Pro Val Ser Gly
    945                     950                     955                     960
Gly Glu Cys Ser Pro Pro Leu Thr Val Glu Pro Pro Val Arg Pro Leu
                965                     970                     975
Ser Ala Thr Leu Asn Arg Arg Asp Met Pro Arg Ser Glu Phe Gly Ser
            980                     985                     990
Leu Asp Gly Pro Leu Pro His Pro Arg Trp Ser Ala Glu Ala Ser Gly
            995                     1000                    1005
Lys Pro Ser Pro Ser Asp Pro Gly Ser Gly Thr Ala Thr Met Met Asn
    1010                    1015                    1020
Ser Ser Ser Arg Gly Ser Ser Pro Thr Arg Val Leu Asp Glu Gly Lys
1025                    1030                    1035                    1040
Val Asn Met Ala Pro Lys Gly Pro Pro Pro Phe Pro Gly Val Pro Leu
                1045                    1050                    1055
Met Ser Thr Pro Met Gly Gly Pro Val Pro Pro Pro Ile Arg Tyr Gly
            1060                    1065                    1070
Pro Pro Pro Gln Leu Cys Gly Pro Phe Gly Pro Arg Pro Leu Pro Pro
        1075                    1080                    1085
Pro Phe Gly Pro Gly Met Arg Pro Pro Leu Gly Leu Arg Glu Phe Ala
    1090                    1095                    1100
Pro Gly Val Pro Pro Gly Arg Arg Asp Leu Pro Leu His Pro Arg Gly
1105                    1110                    1115                    1120
Phe Leu Pro Gly His Ala Pro Phe Arg Pro Leu Gly Ser Leu Gly Pro
                1125                    1130                    1135
Arg Glu Tyr Phe Ile Pro Gly Thr Arg Leu Pro Pro Pro Thr His Gly
            1140                    1145                    1150
Pro Gln Glu Tyr Pro Pro Pro Ala Val Arg Asp Leu Leu Pro Ser
        1155                    1160                    1165
Gly Ser Arg Asp Glu Pro Pro Pro Ala Ser Gln Ser Thr Ser Gln Asp
    1170                    1175                    1180
Cys Ser Gln Ala Leu Lys Gln Ser Pro
1185                    1190            1193
```

```
<210> 1118
<211> 981
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1118
Met Ala Ala Asp Ser Glu Pro Glu Ser Glu Val Phe Glu Ile Thr Asp
1               5                   10                  15
Phe Thr Thr Ala Ser Glu Trp Glu Arg Phe Ile Ser Lys Val Glu Glu
            20                  25                  30
Val Leu Asn Asp Trp Lys Leu Ile Gly Asn Ser Leu Gly Lys Pro Leu
    35                  40                  45
Glu Lys Gly Ile Phe Thr Ser Gly Thr Trp Glu Glu Lys Ser Asp Glu
    50                  55                  60
Ile Ser Phe Ala Asp Phe Lys Phe Ser Val Thr His His Tyr Leu Val
65                  70                  75                  80
Gln Glu Ser Thr Asp Lys Glu Gly Lys Asp Glu Leu Leu Glu Asp Val
            85                  90                  95
Val Pro Gln Ser Met Gln Asp Leu Leu Gly Met Asn Asn Asp Phe Pro
```

```
                    100                     105                    110
Pro Arg Ala His Cys Leu Val Arg Trp Tyr Gly Leu Arg Glu Phe Val
           115                     120                    125
Val Ile Ala Pro Ala Ala His Ser Asp Ala Val Leu Ser Glu Ser Lys
       130                     135                    140
Cys Asn Leu Leu Leu Ser Ser Val Ser Ile Ala Leu Gly Asn Thr Gly
145                     150                    155                    160
Cys Gln Val Pro Leu Phe Val Gln Ile His His Lys Trp Arg Arg Met
               165                     170                    175
Tyr Val Gly Glu Cys Gln Gly Pro Gly Val Arg Thr Asp Phe Glu Met
           180                     185                    190
Val His Leu Arg Lys Val Pro Asn Gln Tyr Thr His Leu Ser Gly Leu
       195                     200                    205
Leu Asp Ile Phe Lys Ser Lys Ile Gly Cys Pro Leu Thr Pro Leu Pro
   210                     215                    220
Pro Val Ser Ile Ala Ile Arg Phe Thr Tyr Val Leu Gln Asp Trp Gln
225                     230                    235                    240
Gln Tyr Phe Trp Pro Gln Gln Pro Pro Asp Ile Asp Ala Leu Val Gly
               245                     250                    255
Gly Glu Val Gly Gly Leu Glu Phe Gly Lys Leu Pro Phe Gly Ala Cys
           260                     265                    270
Glu Asp Pro Ile Ser Glu Leu His Leu Ala Thr Thr Trp Pro His Leu
           275                     280                    285
Thr Glu Gly Ile Ile Val Asp Asn Asp Val Tyr Ser Asp Leu Asp Pro
       290                     295                    300
Ile Gln Ala Pro His Trp Ser Val Arg Val Arg Lys Ala Glu Asn Pro
305                     310                    315                    320
Gln Cys Leu Leu Gly Asp Phe Val Thr Glu Phe Phe Lys Ile Cys Arg
               325                     330                    335
Arg Lys Glu Ser Thr Asp Glu Ile Leu Gly Arg Ser Ala Phe Glu Glu
           340                     345                    350
Glu Gly Lys Glu Thr Ala Asp Ile Thr His Ala Leu Ser Lys Leu Thr
       355                     360                    365
Glu Pro Ala Ser Val Pro Ile His Lys Leu Ser Val Ser Asn Met Val
   370                     375                    380
His Thr Ala Lys Lys Lys Ile Arg Lys His Arg Gly Val Glu Glu Ser
385                     390                    395                    400
Pro Leu Asn Asn Asp Val Leu Asn Thr Ile Leu Leu Phe Leu Phe Pro
               405                     410                    415
Asp Ala Val Ser Glu Lys Pro Leu Asp Gly Thr Thr Ser Thr Asp Asn
           420                     425                    430
Asn Asn Pro Pro Ser Glu Ser Glu Asp Tyr Asn Leu Tyr Asn Gln Phe
       435                     440                    445
Lys Ser Ala Pro Ser Asp Ser Leu Thr Tyr Lys Leu Ala Leu Cys Leu
   450                     455                    460
Cys Met Ile Asn Phe Tyr His Gly Gly Leu Lys Gly Val Ala His Leu
465                     470                    475                    480
Trp Gln Glu Phe Val Leu Glu Met Arg Phe Arg Trp Glu Asn Asn Phe
               485                     490                    495
Leu Ile Pro Gly Leu Ala Ser Gly Pro Pro Asp Leu Arg Cys Cys Leu
           500                     505                    510
Leu His Gln Lys Leu Gln Met Leu Asn Cys Cys Ile Glu Arg Lys Lys
       515                     520                    525
Ala Arg Asp Glu Gly Lys Lys Thr Ser Ala Ser Asp Val Thr Asn Ile
       530                     535                    540
Tyr Pro Gly Asp Ala Gly Lys Ala Gly Asp Gln Leu Val Pro Asp Asn
545                     550                    555                    560
Leu Lys Glu Thr Asp Lys Glu Lys Gly Glu Val Gly Lys Ser Trp Asp
               565                     570                    575
Ser Trp Ser Asp Ser Glu Glu Glu Phe Phe Glu Cys Leu Ser Asp Thr
           580                     585                    590
Glu Glu Leu Lys Gly Asn Gly Gln Glu Ser Gly Lys Lys Gly Gly Pro
           595                     600                    605
Lys Glu Met Ala Asn Leu Arg Pro Glu Gly Arg Leu Tyr Gln His Gly
```

```
              610                    615                    620
Lys Leu Thr Leu Leu His Asn Gly Glu Pro Leu Tyr Ile Pro Val Thr
625                    630                    635                    640
Gln Glu Pro Ala Pro Met Thr Glu Asp Leu Leu Glu Glu Gln Ser Glu
                  645                    650                    655
Val Leu Ala Lys Leu Gly Thr Ser Ala Glu Gly Ala His Leu Arg Ala
                  660                    665                    670
Arg Met Gln Ser Ala Cys Leu Leu Ser Asp Met Glu Ser Phe Lys Ala
              675                    680                    685
Ala Asn Pro Gly Cys Ser Leu Glu Asp Phe Val Arg Trp Tyr Ser Pro
          690                    695                    700
Arg Asp Tyr Ile Glu Glu Glu Val Ile Asp Glu Lys Gly Asn Val Val
705                    710                    715                    720
Leu Lys Gly Glu Leu Ser Ala Arg Met Lys Ile Pro Ser Asn Met Trp
                  725                    730                    735
Val Glu Ala Trp Glu Thr Ala Lys Pro Ile Pro Ala Arg Arg Gln Arg
                  740                    745                    750
Arg Leu Phe Asp Asp Thr Arg Glu Ala Glu Lys Val Leu His Tyr Leu
              755                    760                    765
Ala Ile Gln Lys Pro Ala Asp Leu Ala Arg His Leu Leu Pro Cys Val
          770                    775                    780
Ile His Ala Ala Val Leu Lys Val Lys Glu Glu Glu Ser Leu Glu Asn
785                    790                    795                    800
Ile Ser Ser Val Lys Lys Ile Ile Lys Gln Ile Ile Ser His Ser Ser
                  805                    810                    815
Lys Val Leu His Phe Pro Asn Pro Glu Asp Lys Lys Leu Glu Glu Ile
              820                    825                    830
Ile His Gln Ile Thr Asn Val Glu Ala Leu Ile Ala Arg Ala Arg Ser
              835                    840                    845
Leu Lys Ala Lys Phe Gly Thr Glu Lys Cys Glu Gln Glu Glu Glu Lys
          850                    855                    860
Glu Asp Leu Glu Arg Phe Val Ser Cys Leu Leu Glu Gln Pro Glu Val
865                    870                    875                    880
Leu Val Thr Gly Ala Gly Arg Gly His Ala Gly Arg Ile Ile His Lys
                  885                    890                    895
Leu Phe Val Asn Ala Gln Arg Ala Ala Ala Met Thr Pro Pro Glu Glu
                  900                    905                    910
Glu Leu Lys Arg Met Gly Ser Pro Glu Glu Arg Arg Gln Asn Ser Val
              915                    920                    925
Ser Asp Phe Pro Pro Pro Ala Gly Arg Glu Phe Ile Leu Arg Thr Thr
      930                    935                    940
Val Pro Arg Pro Ala Pro Tyr Ser Lys Ala Leu Pro Gln Arg Met Tyr
945                    950                    955                    960
Ser Val Leu Thr Lys Glu Asp Phe Arg Leu Ala Gly Ala Phe Ser Ser
                  965                    970                    975
Asp Thr Ser Phe Phe
              980 981
```

```
      <210> 1119
      <211> 554
      <212>Amino acid
      <213> Homo sapiens




      <400> 1119
Ser Pro Thr Arg Thr Gly Asp Arg Ser Val Ser Leu Ile Val Phe Leu
1                 5                    10                    15
Thr Glu Gly Lys Pro Thr Val Gly Glu Thr His Thr Leu Lys Ile Leu
          20                    25                    30
Asn Asn Thr Arg Glu Ala Ala Arg Gly Gln Val Cys Ile Phe Thr Ile
```

```
                35                       40                       45
Gly Ile Gly Asn Asp Val Asp Phe Arg Leu Leu Glu Lys Leu Ser Leu
        50                       55                       60
Glu Asn Cys Gly Leu Thr Arg Arg Val His Glu Glu Glu Asp Ala Gly
65                       70                       75                       80
Ser Gln Leu Ile Gly Phe Tyr Asp Glu Ile Arg Thr Pro Leu Leu Ser
                85                       90                       95
Asp Ile Arg Ile Asp Tyr Pro Pro Ser Ser Val Val Gln Ala Thr Lys
            100                      105                      110
Thr Leu Phe Pro Asn Tyr Phe Asn Gly Ser Glu Ile Ile Ile Ala Gly
            115                      120                      125
Lys Leu Val Asp Arg Lys Leu Asp His Leu His Val Glu Val Thr Ala
        130                      135                      140
Ser Asn Ser Lys Lys Phe Ile Ile Leu Lys Thr Asp Val Pro Val Arg
145                      150                      155                      160
Pro Gln Lys Ala Gly Lys Asp Val Thr Gly Ser Pro Arg Pro Gly Gly
                165                      170                      175
Asp Gly Glu Gly Asp Thr Asn His Ile Glu Arg Leu Trp Ser Tyr Leu
            180                      185                      190
Thr Thr Lys Glu Leu Leu Ser Ser Trp Leu Gln Ser Asp Asp Glu Pro
        195                      200                      205
Glu Lys Glu Arg Leu Arg Gln Arg Ala Gln Ala Leu Ala Val Ser Tyr
    210                      215                      220
Arg Phe Leu Thr Pro Phe Thr Ser Met Lys Leu Arg Gly Pro Val Pro
225                      230                      235                      240
Arg Met Asp Gly Leu Glu Glu Ala His Gly Met Ser Ala Ala Met Gly
                245                      250                      255
Pro Glu Pro Val Val Gln Ser Val Arg Gly Ala Gly Thr Gln Pro Gly
            260                      265                      270
Pro Leu Leu Lys Lys Pro Tyr Gln Pro Arg Ile Lys Ile Ser Lys Thr
        275                      280                      285
Ser Val Asp Gly Asp Pro His Phe Val Val Asp Phe Pro Leu Ser Arg
    290                      295                      300
Leu Thr Val Cys Phe Asn Ile Asp Gly Gln Pro Gly Asp Ile Leu Arg
305                      310                      315                      320
Leu Val Ser Asp His Arg Asp Ser Gly Val Thr Val Asn Gly Glu Leu
            325                      330                      335
Ile Gly Ala Pro Ala Pro Pro Asn Gly His Lys Lys Gln Arg Thr Tyr
            340                      345                      350
Leu Arg Thr Ile Thr Ile Leu Ile Asn Lys Pro Glu Arg Ser Tyr Leu
        355                      360                      365
Glu Ile Thr Pro Ser Arg Val Ile Leu Asp Gly Gly Asp Arg Leu Val
    370                      375                      380
Leu Pro Cys Asn Gln Ser Val Val Val Gly Ser Trp Gly Leu Glu Val
385                      390                      395                      400
Ser Val Ser Ala Asn Ala Asn Val Thr Val Thr Ile Gln Gly Ser Ile
            405                      410                      415
Ala Phe Val Ile Leu Ile His Leu Tyr Lys Lys Pro Ala Pro Phe Gln
            420                      425                      430
Arg His His Leu Gly Phe Tyr Ile Ala Asn Ser Glu Gly Leu Ser Ser
        435                      440                      445
Asn Cys His Gly Leu Leu Gly Gln Phe Leu Asn Gln Asp Ala Arg Leu
        450                      455                      460
Thr Glu Asp Pro Ala Gly Pro Ser Gln Asn Leu Thr His Pro Leu Leu
465                      470                      475                      480
Leu Gln Val Gly Glu Gly Pro Glu Ala Val Leu Thr Val Lys Gly His
                485                      490                      495
Gln Val Pro Val Val Trp Lys Gln Arg Lys Ile Tyr Asn Gly Glu Glu
            500                      505                      510
Gln Ile Asp Cys Trp Phe Ala Arg Asn Asn Ala Ala Lys Leu Ile Asp
            515                      520                      525
Gly Glu Tyr Lys Asp Tyr Leu Ala Ser His Pro Phe Asp Thr Gly Met
        530                      535                      540
Thr Leu Gly Gln Gly Met Ser Arg Glu Leu
```

649

545   550   554

<210> 1120
<211> 107
<212>Amino acid
<213> Homo sapiens

<400> 1120
Val Pro Leu Glu Ser Leu Ser Cys Ser His Ala Asp Asn Trp Lys Gln
1   5   10   15
Glu Leu Thr Lys Phe Ile Ser Pro Asp Gln Leu Pro Val Glu Phe Gly
            20   25   30
Gly Thr Met Thr Asp Pro Asp Gly Asn Pro Lys Cys Leu Thr Lys Ile
        35   40   45
Asn Tyr Gly Gly Glu Val Pro Lys Ser Tyr Tyr Leu Cys Lys Gln Val
    50   55   60
Arg Leu Gln Tyr Glu His Thr Arg Ser Val Gly Arg Gly Ser Ser Leu
65   70   75   80
Gln Val Glu Asn Glu Ile Leu Phe Pro Gly Cys Val Leu Arg Cys Pro
            85   90   95
Glu Val Leu Gln His Leu Gln Pro Gly Ser Phe
            100   105   107

<210> 1121
<211> 1241
<212>Amino acid
<213> Homo sapiens

<400> 1121
Pro Ala Ala Pro Glu His Thr Asp Pro Ser Glu Pro Arg Gly Ser Val
1   5   10   15
Ser Cys Cys Ser Leu Leu Arg Gly Leu Ser Ser Gly Trp Ser Ser Pro
            20   25   30
Leu Leu Pro Ala Pro Val Cys Asn Pro Asn Lys Ala Ile Phe Thr Val
        35   40   45
Asp Ala Lys Thr Thr Glu Ile Leu Val Ala Asn Asp Lys Ala Cys Gly
    50   55   60
Leu Leu Gly Tyr Ser Ser Gln Asp Leu Ile Gly Gln Lys Leu Thr Gln
65   70   75   80
Phe Phe Leu Arg Ser Asp Ser Asp Val Val Glu Ala Leu Ser Glu Glu
            85   90   95
His Met Glu Ala Asp Gly His Ala Ala Val Val Phe Gly Thr Val Val
            100   105   110
Asp Ile Ile Ser Arg Ser Gly Glu Lys Ile Pro Val Ser Val Trp Met
        115   120   125
Lys Arg Met Arg Gln Glu Arg Arg Leu Cys Cys Val Val Val Leu Glu
    130   135   140
Pro Val Glu Arg Val Ser Thr Trp Val Ala Phe Gln Ser Asp Gly Thr
145   150   155   160
Val Thr Ser Cys Asp Ser Leu Phe Ala His Leu His Gly Tyr Val Ser
            165   170   175
Gly Glu Asp Val Ala Gly Gln His Ile Thr Asp Leu Ile Pro Ser Val
            180   185   190
Gln Leu Pro Pro Ser Gly Gln His Ile Pro Lys Asn Leu Lys Ile Gln

```
                195                    200                    205
Arg Ser Val Gly Arg Ala Arg Asp Gly Thr Thr Phe Pro Leu Ser Leu
        210                    215                    220
Lys Leu Lys Ser Gln Pro Ser Ser Glu Glu Ala Thr Thr Gly Glu Ala
225                    230                    235                    240
Ala Pro Val Ser Gly Tyr Arg Ala Ser Val Trp Val Phe Cys Thr Ile
                245                    250                    255
Ser Gly Leu Ile Thr Leu Leu Pro Asp Gly Thr Ile His Gly Ile Asn
                260                    265                    270
His Ser Phe Ala Leu Thr Leu Phe Gly Tyr Gly Lys Thr Glu Leu Leu
        275                    280                    285
Gly Lys Asn Ile Thr Phe Leu Ile Pro Gly Phe Tyr Ser Tyr Met Asp
        290                    295                    300
Leu Ala Tyr Asn Ser Ser Leu Gln Leu Pro Asp Leu Ala Ser Cys Leu
305                    310                    315                    320
Asp Val Gly Asn Glu Ser Gly Cys Gly Glu Arg Thr Leu Asp Pro Trp
                325                    330                    335
Gln Gly Gln Asp Pro Ala Glu Gly Gly Gln Asp Pro Arg Ile Asn Val
                340                    345                    350
Val Leu Ala Gly Gly His Val Val Pro Arg Asp Glu Ile Arg Lys Leu
        355                    360                    365
Met Glu Ser Gln Asp Ile Phe Thr Gly Thr Gln Thr Glu Leu Ile Ala
        370                    375                    380
Gly Gly Gln Leu Leu Ser Cys Leu Ser Pro Gln Pro Ala Pro Gly Val
385                    390                    395                    400
Asp Asn Val Pro Glu Gly Ser Leu Pro Val His Gly Glu Gln Ala Leu
                405                    410                    415
Pro Lys Asp Gln Gln Ile Thr Ala Leu Gly Arg Glu Glu Pro Val Ala
            420                    425                    430
Ile Glu Ser Pro Gly Gln Asp Leu Leu Gly Glu Ser Arg Ser Glu Pro
        435                    440                    445
Val Asp Val Lys Pro Phe Ala Ser Cys Glu Asp Ser Glu Ala Pro Val
    450                    455                    460
Pro Ala Glu Asp Gly Gly Ser Asp Ala Gly Met Cys Gly Leu Cys Gln
465                    470                    475                    480
Lys Ala Gln Leu Glu Arg Met Gly Val Ser Gly Pro Ser Gly Ser Asp
                485                    490                    495
Leu Trp Ala Gly Ala Ala Val Ala Lys Pro Gln Ala Lys Gly Gln Leu
            500                    505                    510
Ala Gly Gly Ser Leu Leu Met His Cys Pro Cys Tyr Gly Ser Glu Trp
        515                    520                    525
Gly Leu Trp Trp Arg Ser Gln Asp Leu Ala Pro Ser Pro Ser Gly Met
        530                    535                    540
Ala Gly Leu Ser Phe Gly Thr Pro Thr Leu Asp Glu Pro Trp Leu Gly
545                    550                    555                    560
Val Glu Asn Asp Arg Glu Glu Leu Gln Thr Cys Leu Ile Lys Glu Gln
                565                    570                    575
Leu Ser Gln Leu Ser Leu Ala Gly Ala Leu Asp Val Pro His Ala Glu
                580                    585                    590
Leu Val Pro Thr Glu Cys Gln Ala Val Thr Ala Pro Val Ser Ser Cys
        595                    600                    605
Asp Leu Gly Gly Arg Asp Leu Cys Gly Gly Cys Thr Gly Ser Ser Ser
    610                    615                    620
Ala Cys Tyr Ala Leu Ala Thr Asp Leu Pro Gly Gly Leu Glu Ala Val
625                    630                    635                    640
Glu Ala Gln Glu Val Asp Val Asn Ser Phe Ser Trp Asn Leu Lys Glu
                645                    650                    655
Leu Phe Phe Ser Asp Gln Thr Asp Gln Thr Ser Ser Asn Cys Ser Cys
            660                    665                    670
Ala Thr Ser Glu Leu Arg Glu Thr Pro Ser Ser Leu Ala Val Gly Ser
        675                    680                    685
Asp Pro Asp Val Gly Ser Leu Gln Glu Gln Gly Ser Cys Val Leu Asp
        690                    695                    700
Asp Arg Glu Leu Leu Leu Leu Thr Gly Thr Cys Val Asp Leu Gly Gln
```

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           705                    710                    715                    720
       Gly Arg Arg Phe Arg Glu Ser Cys Val Gly His Asp Pro Thr Glu Pro
                       725                    730                    735
       Leu Glu Val Cys Leu Val Ser Ser Glu His Tyr Ala Ala Ser Asp Arg
                   740                    745                    750
       Glu Ser Pro Gly His Val Pro Ser Thr Leu Asp Ala Gly Pro Glu Asp
                   755            .          760                    765
       Thr Cys Pro Ser Ala Glu Glu Pro Arg Leu Asn Val Gln Val Thr Ser
           770                    775                    780
       Thr Pro Val Ile Val Met Arg Gly Ala Ala Gly Leu Gln Arg Glu Ile
       785                    790  .                 795                    800
       Gln Glu Gly Ala Tyr Ser Gly Ser Cys Tyr His Arg Asp Gly Leu Arg
                       805             .        810 ·                  815
       Leu Ser Ile Gln Phe Glu Val'Arg Arg Val Glu Leu Gln Gly Pro Thr
                   820                    825                    830
       Pro Leu Phe Cys Cys Trp Leu Val Lys Asp Leu Leu His Ser Gln Arg
               835                    840                    845
       Asp Ser Ala Ala Arg Thr Arg Leu Phe Leu Ala Ser Leu Pro Gly Ser
           850                    855                    860
       Thr His Ser Thr Ala Ala Glu Leu Thr Gly Pro Ser Leu Val Glu Val
       865                    870                    875                    880
       Leu Arg Ala Arg Pro Trp Phe Glu Glu Pro Pro Lys Ala Val Glu Leu
                       885                    890  .                 895
       Glu Gly Leu Ala Ala Cys Glu Gly Glu Tyr Ser Gln Lys Tyr Ser Thr
                   900                    905                    910
       Met Ser Pro Leu Gly Ser Gly Ala Phe Gly Phe Val Trp Thr Ala Val
               915                    920                    925
       Asp Lys Glu Lys Asn Lys Glu Val Val Val Lys Phe Ile Lys Lys Glu
           930                    935                    940
       Lys Val Leu Glu Asp Cys Trp Ile Glu Asp Pro Lys Leu Gly Lys Val
       945                    950                    955                    960
       Thr Leu Glu Ile Ala Ile Leu Ser Arg Val Glu His Ala Asn Ile Ile
                   965                 .  970                    975
       Lys Val Leu Asp Ile Phe Glu Asn Gln Gly Phe Phe Gln Leu Val Met
               980            .          985                    990
       Glu Lys His Gly Ser Gly Leu Asp Leu Phe Ala Phe Ile Asp Arg His
               995                   1000                   1005
       Pro Arg Leu Asp Glu Pro Leu Ala Ser Tyr Ile Phe Arg Gln Val Arg
           1010                   1015   ·                1020
       Ala Gly Gln Ser Arg Leu Val Ser Ala Val Gly Tyr Leu Arg Leu Lys
       1025                   1030      . .    1035          ·        1040
       Asp Ile Ile His Arg Asp Ile Lys Asp Glu Asn Ile Val Ile Ala Glu
                   1045                   1050                   1055
       Asp Phe Thr Ile Lys Leu Ile Asp Phe Gly Ser Ala Ala Tyr Leu Glu
                   1060                   1065                   1070
       Arg Gly Lys Leu Phe Tyr Thr Phe Cys Gly Thr Ile Glu Tyr Cys Ala
               1075                   1080                   1085
       Pro Glu Val Leu Met Gly Asn Pro Tyr Arg Gly Pro Glu Leu Glu Met
           1090                   1095                   1100  ·
       Trp Ser Leu Gly Val Thr Leu Tyr Thr Leu Val Phe Glu Glu Asn Pro
       1105                   1110                   1115                   1120
       Phe Cys Glu Leu Glu Glu Thr Val Glu Ala Ala Ile His Pro Pro Tyr
                   1125                   1130                   1135
       Leu Val Ser Lys Glu Leu Met Ser Leu Val Ser Gly Leu Leu Gln Pro
                   1140                   1145                   1150
       Val Pro Glu Arg Arg Thr Thr Leu Glu Lys Leu Val Thr Asp Pro Trp
               1155                   1160                   1165
       Val Thr Gln Pro Val Asn Leu Ala Asp Tyr Thr Trp Glu Glu Val Phe
           1170                   1175                   1180
       Arg Val Asn Lys Pro Glu Ser Gly Val Leu Ser Ala Ala Ser Leu Glu
       1185                   1190                   1195                   1200
       Met Gly Asn Arg Ser Leu Ser Asp Val Ala Gln Ala Gln Glu Leu Cys
                   1205       .               1210                   1215
       Gly Gly Pro Val Pro Gly Glu Ala Pro Asn Gly Gln Gly Cys Leu His
```

652

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                    1220                    1225                    1230
     Pro Gly Asp Pro Arg Leu Leu Thr Ser
             1235                    12401241


        <210> 1122
        <211> 395
        <212>Amino acid
        <213> Homo sapiens




        <400> 1122
     Pro Gly Thr Ser Ala Ala Thr Cys Arg Phe Leu Ser Pro Pro Val Ile
     1                   5                   10                  15
     Ser Leu Ser Phe Thr Gly Leu Cys Ile Ser Asp Leu Val Val Ala Val
                    20                  25                  30
     Asn Gly Val Trp Ile Leu Val Glu Thr Phe Met Leu Lys Gly Gly Asn
             35                  40                  45
     Phe Phe Ser Lys His Val Pro Trp Ser Tyr Leu Val Phe Leu Thr Ile
         50                  55                  60
     Tyr Gly Val Glu Leu Phe Leu Lys Val Ala Gly Leu Gly Pro Val Glu
     65                  70                  75                  80
     Tyr Leu Ser Ser Gly Trp Asn Leu Phe Asp Phe Ser Val Thr Val Phe
                    85                  90                  95
     Ala Phe Leu Gly Leu Leu Ala Leu Ala Leu Asn Met Glu Pro Phe Tyr
                    100                 105                 110
     Phe Ile Val Val Leu Arg Pro Leu Gln Leu Leu Arg Leu Phe Lys Leu
             115                 120                 125
     Lys Glu Arg Tyr Arg Asn Val Leu Asp Thr Met Phe Glu Leu Leu Pro
         130                 135                 140
     Arg Met Ala Ser Leu Gly Leu Thr Leu Leu Ile Phe Tyr Tyr Ser Phe
     145                 150                 155                 160
     Ala Ile Val Gly Met Glu Phe Phe Cys Gly Ile Val Phe Pro Asn Cys
                    165                 170                 175
     Cys Asn Thr Ser Thr Val Ala Asp Ala Tyr Arg Trp Arg Asn His Thr
                    180                 185                 190
     Val Gly Asn Arg Thr Val Val Glu Glu Gly Tyr Tyr Tyr Leu Asn Asn
             195                 200                 205
     Phe Asp Asn Ile Leu Asn Ser Phe Val Thr Leu Phe Glu Leu Thr Val
         210                 215                 220
     Val Asn Asn Trp Tyr Ile Ile Met Glu Gly Val Thr Ser Gln Thr Ser
     225                 230                 235                 240
     His Trp Ser Arg Leu Tyr Phe Met Thr Phe Tyr Ile Val Thr Met Val
                    245                 250                 255
     Val Met Thr Ile Ile Val Ala Phe Ile Leu Glu Ala Phe Val Phe Arg
                    260                 265                 270
     Met Asn Tyr Ser Arg Lys Asn Gln Asp Ser Glu Val Asp Gly Gly Ile
             275                 280                 285
     Thr Leu Glu Lys Glu Ile Ser Lys Glu Glu Leu Val Ala Val Leu Glu
         290                 295                 300
     Leu Tyr Arg Glu Ala Arg Gly Ala Ser Ser Asp Val Thr Arg Leu Leu
     305                 310                 315                 320
     Glu Thr Leu Ser Gln Met Glu Arg Tyr Gln Gln His Ser Met Val Phe
                    325                 330                 335
     Leu Gly Arg Arg Ser Arg Thr Lys Ser Asp Leu Ser Leu Lys Met Tyr
             340                 345                 350
     Gln Glu Glu Ile Gln Glu Trp Tyr Glu Glu His Ala Arg Glu Gln Glu
             355                 360                 365
     Gln Gln Arg Gln Leu Ser Ser Ser Ala Ala Pro Ala Ala Gln Gln Pro
         370                 375                 380
     Pro Gly Ser Arg Gln Arg Ser Gln Thr Val Thr
```

385   390   395

```
        <210> 1123
        <211> 328
        <212>Amino acid
        <213> Homo sapiens




        <400> 1123
Leu Ala Gly Val Gly Thr Gln Ala Pro Pro Arg Arg Pro Gly Gly Glu
 1           .       5                   10                  15
Met Ala Ala Gly Gln Asn Gly His Glu Glu Trp Val Gly Ser Ala Tyr
            20                  25                  30
Leu Phe Val Glu Ser Ser Leu Asp Lys Val Val Leu Ser Asp Ala Tyr
        35                  40                  45
Ala His Pro Gln Gln Lys Val Ala Val Tyr Arg Ala Leu Gln Ala Ala
    50                  55                  60
Leu Ala Glu Ser Gly Gly Ser Pro Asp Val Leu Gln Met Leu Lys Ile
65                  70                  75                  80
His Arg Ser Asp Pro Gln Leu Ile Val Gln Leu Arg Phe Cys Gly Arg
                85                  90                  95
Gln Pro Cys Gly Arg Phe Leu Arg Ala Tyr Arg Glu Gly Ala Leu Arg
            100                 105                 110
Ala Ala Leu Gln Arg Ser Leu Ala Ala Ala Leu Ala Gln His Ser Val
        115                 120                 125
Pro Leu Gln Leu Asp Leu Arg Ala Gly Ala Glu Arg Leu Glu Ala Leu
    130                 135                 140
Leu Ala Asp Glu Glu Arg Cys Leu Ser Cys Ile Leu Ala Gln Gln Pro
145                 150                 155                 160
Asp Arg Leu Arg Asp Glu Glu Leu Ala Glu Leu Glu Asp Ala Leu Arg
                165                 170                 175
Asn Leu Lys Cys Gly Ser Gly Ala Arg Gly Gly Asp Gly Glu Val Ala
            180                 185                 190
Ser Ala Pro Leu Gln Pro Pro Val Pro Ser Leu Ser Glu Val Lys Pro
            195                 200                 205
Pro Pro Pro Pro Pro Pro Ala Gln Thr Phe Leu Phe Gln Gly Gln Pro
    210                 215                 220
Val Val Asn Arg Pro Leu Ser Leu Lys Asp Gln Gln Thr Phe Ala Arg
225                 230                 235                 240
Ser Val Gly Leu Lys Trp Arg Lys Val Gly Arg Ser Leu Gln Arg Gly
            245                 250                 255
Cys Arg Ala Leu Arg Asp Pro Ala Leu Asp Ser Leu Ala Tyr Glu Tyr
            260                 265                 270
Glu Arg Glu Gly Leu Tyr Glu Gln Ala Phe Gln Leu Leu Arg Arg Phe
    275                 280                 285
Val Gln Ala Glu Gly Arg Arg Ala Thr Leu Gln Arg Leu Val Glu Ala
    290                 295                 300
Leu Glu Glu Asn Glu Leu Thr Ser Leu Ala Glu Asp Leu Leu Gly Leu
305                 310                 315                 320
Thr Asp Pro Asn Gly Gly Leu Ala
                325                 328


        <210> 1124
        <211> 667
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
```

654

```
      <222> (1)...(667)
      <223> X = any amino acid or stop code


           <400> 1124
Ser Ser Lys Pro Lys Leu Lys Lys Arg Phe Ser Leu Arg Ser Val Gly
  1               5                  10                  15
Arg Ser Val Arg Gly Ser Val Arg Gly Ile Leu Gln Trp Arg Gly Thr
             20                  25                  30
Val Asp Pro Pro Ser Ser Ala Gly Pro Leu Glu Thr Ser Ser Gly Pro
         35                  40                  45
Pro Val Leu Gly Gly Asn Ser Asn Ser Asn Ser Ser Gly Gly Ala Gly
     50                  55                  60
Thr Val Gly Arg Gly Leu Val Ser Asp Gly Thr Ser Pro Gly Glu Arg
 65                  70                  75                  80
Trp Thr His Arg Phe Glu Arg Leu Arg Leu Ser Arg Gly Gly Gly Ala
             85                  90                  95
Leu Lys Asp Gly Ala Gly Met Val Gln Arg Glu Glu Leu Leu Ser Phe
            100                 105                 110
Met Gly Ala Glu Glu Ala Ala Pro Asp Pro Ala Gly Val Gly Arg Gly
        115                 120                 125
Gly Gly Val Ala Gly Pro Pro Ser Gly Gly Gly Gly Gln Pro Gln Trp
    130                 135                 140
Gln Lys Cys Arg Leu Leu Leu Arg Ser Glu Gly Glu Gly Gly Gly Gly
145                 150                 155                 160
Ser Arg Leu Glu Phe Phe Val Pro Pro Lys Ala Ser Arg Pro Arg Leu
                165                 170                 175
Ser Ile Pro Cys Ser Ser Ile Thr Asp Val Arg Thr Thr Thr Ala Leu
            180                 185                 190
Glu Met Pro Asp Arg Glu Asn Thr Phe Val Val Lys Val Glu Gly Pro
            195                 200                 205
Ser Glu Tyr Ile Met Glu Thr Val Asp Ala Gln His Val Lys Ala Trp
    210                 215                 220
Val Ser Asp Ile Gln Glu Cys Leu Ser Pro Gly Pro Cys Pro Ala Thr
225                 230                 235                 240
Ser Pro Arg Pro Met Thr Leu Pro Leu Ala Pro Gly Thr Ser Phe Leu
                245                 250                 255
Thr Arg Glu Asn Thr Asp Ser Leu Glu Leu Ser Cys Leu Asn His Ser
            260                 265                 270
Glu Ser Leu Pro Ser Gln Asp Leu Leu Leu Gly Pro Ser Glu Ser Asn
    275                 280                 285
Asp Arg Leu Ser Gln Gly Ala Tyr Gly Gly Leu Ser Asp Arg Pro Ser
    290                 295                 300
Ala Ser Ile Ser Pro Ser Ser Ala Ser Ile Ala Ala Ser His Phe Asp
305                 310                 315                 320
Ser Met Glu Leu Leu Pro Pro Glu Leu Pro Pro Arg Ile Pro Ile Glu
                325                 330                 335
Glu Gly Pro Pro Ala Gly Thr Val His Pro Leu Ser Ala Pro Tyr Pro
            340                 345                 350
Pro Leu Asp Thr Pro Glu Thr Ala Thr Gly Ser Phe Leu Phe Gln Gly
    355                 360                 365
Glu Pro Glu Gly Gly Glu Gly Asp Gln Pro Leu Ser Gly Tyr Pro Trp
    370                 375                 380
Phe His Gly Met Leu Ser Arg Leu Lys Ala Ala Gln Leu Val Leu Thr
385                 390                 395                 400
Gly Gly Thr Gly Ser His Gly Val Phe Leu Val Arg Gln Ser Glu Thr
                405                 410                 415
Arg Arg Gly Glu Tyr Val Leu Thr Phe Asn Phe Gln Gly Lys Ala Lys
            420                 425                 430
His Leu Arg Leu Ser Leu Asn Glu Glu Gly Gln Cys Arg Val Gln His
            435                 440                 445
```

Leu Trp Phe Gln Ser Ile Phe Asp Met Leu Glu His Phe Arg Val His
450   455   460
Pro Ile Pro Leu Glu Ser Gly Gly Ser Ser Asp Val Val Leu Val Ser
465   470   475   480
Tyr Val Pro Ser Ser Gln Arg Gln Gln Gly Glu Gln Ser Arg Ser Ala
485   490   495
Gly Glu Glu Val Pro Val His Pro Arg Ser Glu Ala Gly Ser Arg Leu
500   505   510
Gly Ala Met Arg Gly Cys Ala Arg Glu Met Asp Ala Thr Pro Asn Ala
515   520   525
Ser Cys Thr Leu Met Pro Phe Gly Ala Ser Asp Cys Glu Pro Thr Thr
530   535   540
Ser His Asp Pro Pro Gln Pro Pro Glu Pro Pro Ser Trp Thr Asp Pro
545   550   555   560
Pro Gln Pro Gly Glu Glu Glu Ala Ser Arg Ala Pro Gly Ser Gly Gly
565   570   575
Gln Gln Ala Ala Ala Ala Ala Lys Glu Arg Gln Glu Lys Glu Lys Ala
580   585   590
Gly Gly Gly Gly Val Pro Glu Glu Leu Val Pro Val Val Xaa Leu Val
595   600   605
Pro Val Gly Glu Leu Gly Glu Gly His Arg Pro Gln Ala Gln Glu Ala
610   615   620
Gln Gly Arg Leu Gly Pro Gly Gly Asp Ala Gly Val Pro Pro Met Val
625   630   635   640
Gln Leu Gln Gln Ser Pro Leu Gly Gly Asp Gly Glu Glu Gly Gly His
645   650   655
Pro Arg Ala Ile Asn Asn Gln Tyr Ser Phe Val
660   665   667

<210> 1125
<211> 387
<212>Amino acid
<213> Homo sapiens

<400> 1125
Phe Arg Ala Pro Val Gly Thr Ala Ala Arg Ser Pro Gln Val Val Ile
1   5   10   15
Arg Arg Leu Pro Pro Gly Leu Thr Lys Glu Gln Leu Glu Glu Gln Leu
            20   25   30
Arg Pro Leu Pro Ala His Asp Tyr Phe Glu Phe Phe Ala Ala Asp Leu
    35   40   45
Ser Leu Tyr Pro His Leu Tyr Ser Arg Ala Tyr Ile Asn Phe Arg Asn
    50   55   60
Pro Asp Asp Ile Leu Leu Phe Arg Asp Arg Phe Asp Gly Tyr Ile Phe
65   70   75   80
Leu Asp Ser Lys Asp Pro Glu Tyr Lys Lys Phe Leu Glu Thr Tyr Cys
            85   90   95
Val Glu Glu Glu Lys Thr Ser Ala Asn Pro Glu Thr Leu Leu Gly Glu
            100   105   110
Met Glu Ala Lys Thr Arg Glu Leu Ile Ala Arg Arg Thr Thr Pro Leu
    115   120   125
Leu Glu Tyr Ile Lys Asn Arg Lys Leu Glu Lys Gln Arg Ile Arg Glu
    130   135   140
Glu Lys Arg Glu Glu Arg Arg Arg Glu Leu Glu Lys Lys Arg Leu
145   150   155   160
Arg Glu Glu Glu Lys Arg Arg Arg Glu Glu Glu Arg Cys Lys Lys
            165   170   175
Lys Glu Thr Asp Lys Gln Lys Lys Ile Ala Glu Lys Glu Val Arg Ile
    180   185   190

656

```
Lys Leu Leu Lys Lys Pro Glu Lys Gly Glu Glu Pro Thr Thr Glu Lys
        195             200                 205
Pro Lys Glu Arg Gly Glu Glu Ile Asp Thr Gly Gly Gly Lys Gln Glu
210             215                 220
Ser Cys Ala Pro Gly Ala Val Val Lys Ala Arg Pro Met Glu Gly Ser
225             230                 235                 240
Leu Glu Glu Pro Gln Glu Thr Ser His Ser Gly Ser Asp Lys Glu His
            245                 250                 255
Arg Asp Val Glu Arg Ser Gln Glu Gln Glu Ser Glu Ala Gln Arg Tyr
        260                 265                 270
His Val Asp Asp Gly Arg Arg His Arg Ala His His Glu Pro Glu Arg
        275                 280                 285
Leu Ser Arg Arg Ser Glu Asp Glu Gln Arg Trp Gly Lys Gly Pro Gly
        290                 295                 300
Gln Asp Arg Gly Lys Lys Gly Ser Gln Asp Ser Gly Ala Pro Gly Glu
305             310                 315                 320
Ala Met Glu Arg Leu Gly Arg Ala Gln Arg Cys Asp Asp Ser Pro Ala
            325                 330                 335
Pro Arg Lys Glu Arg Leu Ala Asn Lys Asp Arg Pro Ala Leu Gln Leu
            340                 345                 350
Tyr Asp Pro Gly Ala Arg Phe Arg Ala Arg Glu Cys Gly Gly Asn Arg
            355         ·       360                 365
Arg Ile Cys Lys Ala Glu Gly Ser Gly Thr Gly Pro Glu Lys Arg Glu
370                 375                 380
Glu Ala Glu
385     387
```

```
<210> 1126
<211> 208
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1126
Gly Val Trp Gly Val Cys Val Ser Gly Leu Leu Gln Val Gly Ser Gln
1               5                   10                  15
Arg Ala Gln Ala Trp Arg Ala Trp Ser Pro Met Glu Thr Pro Leu Thr
            20                  25                  30
Gly Thr Phe Leu Trp Pro His Ile Pro Gln Gly Leu Phe Phe Asp Asp
        35                  40                  45
Ser Tyr Gly Phe Tyr Pro Gly Gln Val Leu Ile Gly Pro Ala Lys Ile
    50                  55                  60
Phe Ser Ser Val Gln Trp Leu Ser Gly Val Lys Pro Val Leu Ser Thr
65                  70                  75                  80
Lys Ser Lys Phe Arg Val Val Val Glu Glu Val Gln Val Val Glu Leu
            85                  90                  95
Lys Val Thr Trp Ile Thr Lys Ser Phe Cys Pro Gly Gly Thr Asp Ser
        100                 105                 110
Val Ser Pro Pro Pro Ser Val Ile Thr Gln Glu Asn Leu Gly Arg Val
    115                 120                 125
Lys Arg Leu Gly Cys Phe Asp His Ala Gln Arg His Ala Trp Gly Ala
    130             135                 140
Leu Ser Val Cys Leu Pro Ser Gln Gly Arg Ala Ser Gln Asp Cys Leu
145             150                 155                 160
Gly Met Ser Arg Lys Lys Leu Arg Pro Gly Gly Gly Leu Tyr Gly Gln
            165                 170                 175
Glu Gly Glu Ala Pro Val Glu Glu Ala Gly Cys Ala Asp His Val Met
            180                 185                 190
Leu Pro Arg His Pro Val Phe Pro Gly Pro Phe His Gly Arg Pro Arg
        195                 200                 205             208
```

<210> 1127
<211> 670
<212>Amino acid
<213> Homo sapiens

<400> 1127
Phe Arg Asp Ser Ser Pro Cys Ser Ala Phe Glu Phe His Cys Leu Ser
1   5   10   15
Gly Glu Cys Ile His Ser Ser Trp Arg Cys Asp Gly Gly Pro Asp Cys
                20   25   30
Lys Asp Lys Ser Asp Glu Glu Asn Cys Ala Val Ala Thr Cys Arg Pro
            35   40   45
Asp Glu Phe Gln Cys Ser Asp Gly Asn Cys Ile His Gly Ser Arg Gln
        50   55   60
Cys Asp Arg Glu Tyr Asp Cys Lys Asp Met Ser Asp Glu Val Gly Cys
65   70   75   80
Val Asn Val Thr Leu Cys Glu Gly Pro Asn Lys Phe Lys Cys His Ser
                85   90   95
Gly Glu Cys Ile Thr Leu Asp Lys Val Cys Asn Met Ala Arg Asp Cys
            100   105   110
Arg Asp Trp Ser Asp Glu Pro Ile Lys Glu Cys Gly Thr Asn Glu Cys
            115   120   125
Leu Asp Asn Asn Gly Gly Cys Ser His Val Cys Asn Asp Leu Lys Ile
        130   135   140
Gly Tyr Glu Cys Leu Cys Pro Asp Gly Phe Gln Leu Val Ala Gln Arg
145   150   155   160
Arg Cys Glu Asp Ile Asp Glu Cys Gln Asp Pro Asp Thr Cys Ser Gln
                165   170   175
Leu Cys Val Asn Leu Glu Gly Gly Tyr Lys Cys Gln Cys Glu Glu Gly
                180   185   190
Phe Gln Leu Asp Pro His Thr Lys Ala Cys Lys Ala Val Gly Ser Ile
        195   200   205
Ala Tyr Leu Phe Phe Thr Asn Arg His Glu Val Arg Lys Met Thr Leu
210   215   220
Asp Arg Ser Glu Tyr Thr Ser Leu Ile Pro Asn Leu Arg Asn Val Val
225   230   235   240
Ala Leu Asp Thr Glu Val Ala Ser Asn Arg Ile Tyr Trp Ser Asp Leu
                245   250   255
Ser Gln Arg Met Ile Cys Ser Thr Gln Leu Asp Arg Ala His Gly Val
                260   265   270
Ser Ser Tyr Asp Thr Val Ile Ser Arg Asp Ile Gln Ala Pro Asp Gly
        275   280   285
Leu Ala Val Asp Trp Ile His Ser Asn Ile Tyr Trp Thr Asp Ser Val
    290   295   300
Leu Gly Thr Val Ser Val Ala Asp Thr Lys Gly Val Lys Arg Lys Thr
305   310   315   320
Leu Phe Arg Glu Asn Gly Ser Lys Pro Arg Ala Ile Val Val Asp Pro
                325   330   335
Val His Gly Phe Met Tyr Trp Thr Asp Trp Gly Thr Pro Ala Lys Ile
            340   345   350
Lys Lys Gly Gly Leu Asn Gly Val Asp Ile Tyr Ser Leu Val Thr Glu
        355   360   365
Asn Ile Gln Trp Pro Asn Gly Ile Thr Leu Asp Leu Leu Ser Gly Arg
    370   375   380
Leu Tyr Trp Val Asp Ser Lys Leu His Ser Ile Ser Ser Ile Asp Val
385   390   395   400

```
Asn Gly Gly Asn Arg Lys Thr Ile Leu Glu Asp Glu Lys Arg Leu Ala
            405                     410                     415
His Pro Phe Ser Leu Ala Val Phe Glu Asp Lys Val Phe Trp Thr Asp
            420                     425                     430
Ile Ile Asn Glu Ala Ile Phe Ser Ala Asn Arg Leu Thr Gly Ser Asp
            435                     440                     445
Val Asn Leu Leu Ala Glu Asn Leu Leu Ser Pro Glu Asp Met Val Leu
    450                     455                     460
Phe His Asn Leu Thr Gln Pro Arg Gly Val Asn Trp Cys Glu Arg Thr
465                     470                     475                     480
Thr Leu Ser Asn Gly Gly Cys Gln Tyr Leu Cys Leu Pro Ala Pro Gln
                485                     490                     495
Ile Asn Pro His Ser Pro Lys Phe Thr Cys Ala Cys Pro Asp Gly Met
            500                     505                     510
Leu Leu Ala Arg Asp Met Arg Ser Cys Leu Thr Glu Gly Glu Ala Ala
            515                     520                     525
Val Ala Thr Gln Glu Thr Ser Thr Val Arg Leu Lys Val Ser Ser Thr
    530                     535                     540
Ala Val Arg Thr Gln His Thr Thr Thr Arg Pro Val Pro Asp Thr Ser
545                     550                     555                     560
Arg Leu Pro Gly Ala Thr Pro Gly Leu Thr Thr Val Glu Ile Val Thr
                565                     570                     575
Met Ser His Gln Ala Leu Gly Asp Val Ala Gly Arg Gly Asn Glu Lys
            580                     585                     590
Lys Pro Ser Ser Val Arg Ala Leu Ser Ile Val Leu Pro Ile Val Leu
            595                     600                     605
Leu Val Phe Leu Cys Leu Gly Val Phe Leu Leu Trp Lys Asn Trp Arg
    610                     615                     620
Leu Lys Asn Ile Asn Ser Ile Asn Phe Asp Asn Pro Val Tyr Gln Lys
625                     630                     635                     640
Thr Thr Glu Asp Glu Val His Ile Cys His Asn Gln Asp Gly Tyr Ser
                645                     650                     655
Tyr Pro Ser Arg Gln Met Val Ser Leu Glu Asp Asp Val Ala
            660                     665                     670


        <210> 1128
        <211> 383
        <212>Amino acid
        <213> Homo sapiens




        <400> 1128
Arg Ile Pro Gly Leu Gly Pro Pro Gly Ser Pro Pro Pro Pro His
 1               5                   10                  15
Val Arg Gly Met Pro Gly Cys Pro Cys Pro Gly Cys Gly Met Ala Gly
            20                  25                  30
Pro Arg Leu Leu Phe Leu Thr Ala Leu Ala Leu Glu Leu Leu Gly Arg
        35                  40                  45
Ala Gly Gly Ser Gln Pro Ala Leu Arg Ser Arg Gly Thr Ala Thr Ala
    50                  55                  60
Cys Arg Leu Asp Asn Lys Glu Ser Glu Ser Trp Gly Ala Leu Leu Ser
65                  70                  75                  80
Gly Glu Arg Leu Asp Thr Trp Ile Cys Ser Leu Leu Gly Ser Leu Met
                85                  90                  95
Val Gly Leu Ser Gly Val Phe Pro Leu Leu Val Ile Pro Leu Glu Met
            100                 105                 110
Gly Thr Met Leu Arg Ser Glu Ala Gly Ala Trp Arg Leu Lys Gln Leu
        115                 120                 125
Leu Ser Phe Ala Leu Gly Gly Leu Leu Gly Asn Val Phe Leu His Leu
    130                 135                 140
```

```
Leu Pro Glu Ala Trp Ala Tyr Thr Cys Ser Ala Ser Pro Gly Gly Glu
145              150              155                  160
Gly Gln Ser Leu Gln Gln Gln Gln Leu Gly Leu Trp Val Ile Ala
             165              170                  175
Gly Ile Leu Thr Phe Leu Ala Leu Glu Lys Met Phe Leu Asp Ser Lys
             180              185                  190
Glu Glu Gly Thr Ser Gln Ala Pro Asn Lys Asp Pro Thr Ala Ala Ala
         195              200                  205
Ala Ala Leu Asn Gly Gly His Cys Leu Ala Gln Pro Ala Ala Glu Pro
210                  215                  220
Gly Leu Gly Ala Val Val Arg Ser Ile Lys Val Ser Gly Tyr Leu Asn
225                  230              235                  240
Leu Leu Ala Asn Thr Ile Asp Asn Phe Thr His Gly Leu Ala Val Ala
             245              250                  255
Ala Ser Phe Leu Val Ser Lys Lys Ile Gly Leu Leu Thr Thr Met Ala
             260              265                  270
Ile Leu Leu His Glu Ile Pro His Glu Val Gly Asp Phe Ala Ile Leu
             275              280                  285
Leu Arg Ala Gly Phe Asp Arg Trp Ser Ala Ala Lys Leu Gln Leu Ser
    290              295                  300
Thr Ala Leu Gly Gly Leu Leu Gly Ala Gly Phe Ala Ile Cys Thr Gln
305                  310              315                  320
Ser Pro Lys Gly Val Glu Glu Thr Ala Ala Trp Val Leu Pro Phe Thr
             325              330                  335
Ser Gly Gly Phe Leu Tyr Ile Ala Leu Val Asn Val Leu Pro Asp Leu
         340              345                  350
Leu Glu Glu Glu Asp Pro Trp Arg Ser Leu Gln Gln Leu Leu Leu Leu
    355              360                  365
Cys Ala Gly Ile Val Val Met Val Leu Phe Ser Leu Phe Val Asp
370                  375                  380          383
```

```
<210> 1129
<211> 174
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1129
Gly Lys Val Ser Ala Gly Gln Ala Gly Ala Asp Arg Thr Leu Arg Arg
1            5                  10                  15
Ala Pro Glu Pro Arg Phe Ser Gln Glu Pro Thr Gly Asn Ser Ala Tyr
             20              25                  30
Pro Gln Leu Arg Pro Phe Leu Asp Pro Gln Gly Arg Asp Leu Lys Pro
         35              40                  45
Ser Ala Leu Val Pro Pro Thr Arg Ser His Thr Gly Arg Arg Pro Trp
    50              55                  60
Leu His Thr Gln Pro Leu Pro Gly Pro Gln Gly Arg Ala Trp Gly Pro
65               70                  75                  80
Thr Cys Thr Pro Ala Cys Val Asp Arg Val Leu Glu Ser Glu Glu Gly
             85              90                  95
Arg Arg Glu Tyr Leu Ala Phe Pro Thr Ser Lys Ser Ser Gly Gln Lys
         100             105                  110
Gly Arg Lys Glu Leu Leu Lys Gly Asn Gly Arg Arg Ile Asp Tyr Met
         115             120                  125
Leu His Ala Glu Glu Gly Leu Cys Pro Asp Trp Lys Ala Glu Val Glu
130                  135                  140
Glu Phe Ser Phe Ile Thr Gln Leu Ser Gly Leu Thr Asp His Leu Pro
145              150              155                  160
Val Ala Met Arg Leu Met Val Ser Ser Gly Glu Glu Glu Ala
             165              170                  174
```

<210> 1130
<211> 231
<212>Amino acid
<213> Homo sapiens

<400> 1130

Pro	Cys	Gly	Gly	Ile	Arg	Leu	Ser	Ala	Ser	Glu	Ala	Ala	Thr	Leu	Phe
1				5					10					15	
Gly	Tyr	Leu	Val	Val	Pro	Ala	Gly	Gly	Gly	Gly	Thr	Phe	Leu	Gly	Gly
		20					25						30		
Phe	Phe	Val	Asn	Lys	Leu	Arg	Leu	Arg	Gly	Ser	Ala	Val	Ile	Lys	Phe
		35				40					45				
Cys	Leu	Phe	Cys	Thr	Val	Val	Ser	Leu	Leu	Gly	Ile	Leu	Val	Phe	Ser
	50				55					60					
Leu	His	Cys	Pro	Ser	Val	Pro	Met	Ala	Gly	Val	Thr	Ala	Ser	Tyr	Gly
65				70				75							80
Gly	Ser	Leu	Leu	Pro	Glu	Gly	His	Leu	Asn	Leu	Thr	Ala	Pro	Cys	Asn
				85				90					95		
Ala	Ala	Cys	Ser	Cys	Gln	Pro	Glu	His	Tyr	Ser	Pro	Val	Cys	Gly	Ser
		100					105					110			
Asp	Gly	Leu	Met	Tyr	Phe	Ser	Leu	Cys	His	Ala	Gly	Cys	Pro	Ala	Ala
	115					120					125				
Thr	Glu	Thr	Asn	Val	Asp	Gly	Gln	Lys	Val	Ser	Gly	Ala	Ala	Ala	Tyr
	130				135					140					
Arg	Pro	Cys	Pro	Pro	Leu	Asp	Pro	Gly	Lys	Gly	Pro	Pro	Cys	Leu	Pro
145				150					155						160
Leu	Val	Ile	Gly	Ala	Ile	Val	Gly	Leu	Pro	Arg	Cys	Thr	Glu	Thr	Val
				165				170					175		
Ala	Val	Ser	Leu	Arg	Ile	Phe	Pro	Leu	Val	Leu	Ala	Met	His	Cys	Arg
			180				185					190			
Glu	Met	His	Phe	Asn	Leu	Ser	Glu	Lys	Ala	Pro	Pro	Ser	Gly	Phe	His
	195					200					205				
Ile	Arg	Cys	Asn	Phe	Leu	Tyr	Ile	Pro	Gln	Gln	His	Ser	Cys	Thr	Asn
	210				215					220					
Gly	Asn	Ser	Thr	Met	Cys	Pro									
225					230	231									

<210> 1131
<211> 234
<212>Amino acid
<213> Homo sapiens

<400> 1131

Leu	Leu	Arg	Lys	Val	Gly	Ala	Pro	Gly	Gly	Ala	Arg	Gly	Val	Ile	Arg
1				5					10					15	
Leu	Leu	Asp	Trp	Phe	Glu	Arg	Pro	Asp	Gly	Phe	Leu	Leu	Val	Leu	Glu
		20					25						30		
Arg	Pro	Glu	Pro	Ala	Gln	Asp	Leu	Phe	Asp	Phe	Ile	Thr	Glu	Arg	Gly
		35					40					45			
Ala	Leu	Asp	Glu	Pro	Leu	Ala	Arg	Arg	Phe	Phe	Ala	Gln	Val	Leu	Ala
	50				55					60					
Ala	Val	Arg	His	Cys	His	Ser	Cys	Gly	Val	Val	His	Arg	Asp	Ile	Lys
65				70				75							80

```
Asp Glu Asn Leu Leu Val Asp Leu Arg Ser Gly Glu Leu Lys Leu Ile
            85                      90                      95
Asp Phe Gly Ser Gly Ala Leu Leu Lys Asp Thr Val Tyr Thr Asp Phe
            100                     105                     110
Asp Gly Thr Arg Val Tyr Ser Pro Pro Glu Trp Ile Arg Tyr His Arg
            115                     120                     125
Tyr His Gly Arg Ser Ala Thr Val Trp Ser Leu Gly Val Leu Leu Tyr
            130                     135                     140
Asp Met Val Cys Gly Asp Ile Pro Phe Glu Gln Asp Glu Glu Ile Leu
145                     150                     155                     160
Arg Gly Arg Leu Leu Phe Arg Arg Arg Val Ser Pro Glu Cys Gln Gln
                165                     170                     175
Leu Ile Arg Trp Cys Leu Ser Leu Arg Pro Ser Glu Arg Pro Ser Leu
            180                     185                     190
Asp Gln Ile Ala Ala His Pro Trp Met Leu Gly Ala Asp Gly Gly Ala
            195                     200                     205
Pro Glu Ser Cys Asp Leu Arg Leu Cys Thr Leu Asp Pro Asp Asp Val
    210                     215                     220
Ala Ser Thr Thr Ser Ser Ser Glu Ser Leu
225                     230                     234


        <210> 1132
        <211> 270
        <212>Amino acid
        <213> Homo sapiens




        <400> 1132
Gly Lys Asn Ser Gln Lys Ala Ser Pro Val Asp Asp Glu Gln Leu Ser
1                   5                   10                      15
Val Cys Leu Ser Gly Phe Leu Asp Glu Val Met Lys Lys Tyr Gly Ser
                20                      25                      30
Leu Val Pro Leu Ser Glu Lys Glu Val Leu Gly Arg Leu Lys Asp Val
            35                      40                      45
Phe Asn Glu Asp Phe Ser Asn Arg Lys Pro Phe Ile Asn Arg Glu Ile
    50                      55                      60
Thr Asn Tyr Arg Ala Arg His Gln Lys Cys Asn Phe Arg Ile Phe Tyr
65                      70                      75                      80
Asn Lys His Met Leu Asp Met Asp Asp Leu Ala Thr Leu Asp Gly Gln
                85                      90                      95
Asn Trp Leu Asn Asp Gln Val Ile Asn Met Tyr Gly Glu Leu Ile Met
            100                     105                     110
Asp Ala Val Pro Asp Lys Val His Phe Phe Asn Ser Phe Phe His Arg
            115                     120                     125
Gln Leu Val Thr Lys Gly Tyr Asn Gly Val Lys Arg Trp Thr Lys Lys
            130                     135                     140
Val Asp Leu Phe Lys Lys Ser Leu Leu Leu Ile Pro Ile His Leu Glu
145                     150                     155                     160
Val His Trp Ser Leu Ile Thr Val Thr Leu Ser Asn Arg Ile Ile Ser
                165                     170                     175
Phe Tyr Asp Ser Gln Gly Ile His Phe Lys Phe Cys Val Glu Asn Ile
            180                     185                     190
Arg Lys Tyr Leu Leu Thr Glu Ala Arg Glu Lys Asn Arg Leu Asn Leu
            195                     200                     205
Gln Gly Trp Gln Thr Ala Val Thr Lys Cys Ile Pro Gln Gln Lys Asn
    210                     215                     220
Asp Ser Asp Cys Gly Val Phe Val Leu Gln Tyr Cys Lys Cys Leu Ala
225                     230                     235                     240
Leu Lys Gln Pro Phe Gln Phe Ser Gln Glu Asp Met Pro Arg Val Arg
            245                     250                     255
```

Lys Arg Ile Tyr Lys Glu Leu Cys Glu Cys Arg Leu Met Asp
            260   265   270

<210> 1133
<211> 204
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(204)
<223> X = any amino acid or stop code

<400> 1133
Pro Pro Gly Gly Xaa Gln Gly Ser Ala Ala Lys His Arg Phe Pro Lys
1   5   10   15
Gly Tyr Arg His Pro Ala Leu Glu Ala Arg Leu Gly Arg Arg Arg Thr
            20   25   30
Val Gln Glu Ala Arg Ala Leu Leu Arg Cys Arg Arg Ala Gly Ile Ser
        35   40   45
Ala Pro Val Val Phe Phe Val Asp Tyr Ala Ser Asn Cys Leu Tyr Met
        50   55   60
Glu Glu Ile Glu Gly Ser Val Thr Val Arg Asp Tyr Ile Gln Ser Thr
65   70   75   80
Met Glu Thr Glu Lys Thr Pro Gln Gly Leu Ser Asn Leu Ala Lys Thr
                85   90   95
Ile Gly Gln Val Leu Ala Arg Met His Asp Glu Asp Leu Ile His Gly
            100   105   110
Asp Leu Thr Thr Ser Asn Met Leu Leu Lys Pro Pro Leu Glu Gln Leu
            115   120   125
Asn Ile Val Leu Ile Asp Phe Gly Leu Ser Phe Ile Ser Ala Leu Pro
        130   135   140
Glu Asp Lys Gly Val Asp Leu Tyr Val Leu Glu Lys Ala Phe Leu Ser
145   150   155   160
Thr His Pro Asn Thr Glu Thr Val Phe Glu Ala Phe Leu Lys Ser Tyr
                165   170   175
Ser Thr Ser Ser Lys Lys Ala Arg Pro Val Leu Lys Lys Leu Asp Glu
            180   185   190
Val Arg Leu Arg Gly Lys Lys Arg Ser Met Val Gly
        195   200   204

<210> 1134
<211> 531
<212> Amino acid
<213> Homo sapiens

<400> 1134
Arg Ala Cys Val Phe Arg Pro Glu Asp Met Met Gln Gly Glu Ala His
1   5   10   15
Pro Ser Ala Ser Leu Ile Asp Arg Thr Ile Lys Met Arg Lys Glu Thr
            20   25   30
Glu Ala Arg Lys Val Val Leu Ala Trp Gly Leu Leu Asn Val Ser Met
        35   40   45
Ala Gly Met Ile Tyr Thr Glu Met Thr Gly Lys Leu Ile Ser Ser Tyr

```
            50                    55                    60
Tyr Asn Val Thr Tyr Trp Pro Leu Trp Tyr Ile Glu Leu Ala Leu Ala
65                    70                    75                    80
Ser Leu Phe Ser Leu Asn Ala Leu Phe Asp Phe Trp Arg Tyr Phe Lys
                85                    90                    95
Tyr Thr Val Ala Pro Thr Ser Leu Val Val Ser Pro Gly Gln Gln Thr
                100                   105                   110
Leu Leu Gly Leu Lys Thr Ala Val Val Gln Thr Thr Pro Pro His Asp
                115                   120                   125
Leu Ala Ala Thr Gln Ile Pro Pro Ala Pro Pro Ser Pro Ser Ile Gln
            130                   135                   140
Gly Gln Ser Val Leu Ser Tyr Ser Pro Ser Arg Ser Pro Ser Thr Ser
145                   150                   155                   160
Pro Lys Phe Thr Thr Ser Cys Met Thr Gly Tyr Ser Pro Gln Leu Gln
                165                   170                   175
Gly Leu Ser Ser Gly Gly Ser Gly Ser Tyr Ser Pro Gly Val Thr Tyr
                180                   185                   190
Ser Pro Val Ser Gly Tyr Asn Lys Leu Ala Ser Phe Ser Pro Ser Pro
                195                   200                   205
Pro Ser Pro Tyr Pro Thr Thr Val Gly Pro Val Glu Ser Ser Gly Leu
            210                   215                   220
Arg Ser Arg Tyr Arg Ser Ser Pro Thr Val Tyr Asn Ser Pro Thr Asp
225                   230                   235                   240
Lys Glu Asp Tyr Met Thr Asp Leu Arg Thr Leu Asp Thr Phe Leu Arg
                245                   250                   255
Ser Glu Glu Glu Lys Gln His Arg Val Lys Leu Gly Ser Pro Asp Ser
                260                   265                   270
Thr Ser Pro Ser Ser Ser Pro Thr Phe Trp Asn Tyr Ser Arg Ser Met
                275                   280                   285
Gly Asp Tyr Ala Gln Thr Leu Lys Lys Phe Gln Tyr Gln Leu Ala Cys
            290                   295                   300
Arg Ser Gln Ala Pro Cys Ala Asn Lys Asp Glu Ala Asp Leu Ser Ser
305                   310                   315                   320
Lys Gln Ala Ala Glu Glu Val Trp Ala Arg Val Ala Met Asn Arg Gln
                325                   330                   335
Leu Leu Asp His Met Asp Ser Trp Thr Ala Lys Phe Arg Asn Trp Ile
                340                   345                   350
Asn Glu Thr Ile Leu Val Pro Leu Val Gln Glu Ile Glu Ser Val Ser
                355                   360                   365
Thr Gln Met Arg Arg Met Gly Cys Pro Glu Leu Gln Ile Gly Glu Ala
            370                   375                   380
Ser Ile Thr Ser Leu Lys Gln Ala Ala Leu Val Lys Ala Pro Leu Ile
385                   390                   395                   400
Pro Thr Leu Asn Thr Ile Val Gln Tyr Leu Asp Leu Thr Pro Asn Gln
                405                   410                   415
Glu Tyr Leu Phe Glu Arg Ile Lys Glu Leu Ser Gln Gly Gly Cys Met
                420                   425                   430
Ser Ser Phe Arg Trp Asn Arg Gly Gly Asp Phe Lys Gly Arg Lys Trp
                435                   440                   445
Asp Thr Asp Leu Pro Thr Asp Ser Ala Ile Ile Met His Val Phe Cys
450                   455                   460
Thr Tyr Leu Asp Ser Arg Leu Pro Pro His Pro Lys Tyr Pro Asp Gly
465                   470                   475                   480
Lys Thr Phe Thr Ser Gln His Phe Val Gln Thr Pro Asn Lys Pro Asp
                485                   490                   495
Val Thr Asn Glu Asn Val Phe Cys Ile Tyr Gln Ser Ala Ile Asn Pro
                500                   505                   510
Pro His Tyr Glu Leu Ile Tyr Gln Arg His Val Tyr Ile Pro Ala Lys
            515                   520                   525
Gly Gln Lys
530 531
```

    <210> 1135

664

<211> 508
<212>Amino acid
<213> Homo sapiens

<400> 1135

Ser 1	Ser	Ala	Val	Glu 5	Phe	Ile	Asn	Arg	Asn 10	Asn	Ser	Val	Val	Gln 15	Val

Ser Ser Ala Val Glu Phe Ile Asn Arg Asn Asn Ser Val Val Gln Val
1   5   10   15
Leu Leu Ala Ala Gly Ala Asp Pro Asn Leu Gly Asp Asp Phe Ser Ser
            20   25   30
Val Tyr Lys Thr Ala Lys Glu Gln Gly Ile His Ser Leu Glu Val Leu
        35   40   45
Ile Thr Arg Glu Asp Asp Phe Asn Asn Arg Leu Asn Asn Arg Ala Ser
        50   55   60
Phe Lys Gly Cys Thr Ala Leu His Tyr Ala Val Leu Ala Asp Asp Tyr
 65   70   75   80
Arg Thr Val Lys Glu Leu Leu Asp Gly Gly Ala Asn Pro Leu Gln Arg
                85   90   95
Asn Glu Met Gly His Thr Pro Leu Asp Tyr Ala Arg Glu Gly Glu Val
            100   105   110
Met Lys Leu Leu Arg Thr Ser Glu Ala Lys Tyr Gln Glu Lys Gln Arg
        115   120   125
Lys Arg Glu Ala Glu Glu Arg Arg Arg Phe Pro Leu Glu Gln Arg Leu
    130   135   140
Lys Glu His Ile Ile Gly Gln Glu Ser Ala Ile Ala Thr Val Gly Ala
145   150   155   160
Ala Ile Arg Arg Lys Glu Asn Gly Trp Tyr Asp Glu Glu His Pro Leu
                165   170   175
Val Phe Leu Phe Leu Gly Ser Ser Gly Ile Gly Lys Thr Glu Leu Ala
            180   185   190
Lys Gln Thr Ala Lys Tyr Met His Lys Asp Ala Lys Lys Gly Phe Ile
        195   200   205
Arg Leu Asp Met Ser Glu Phe Gln Glu Arg His Glu Val Ala Lys Phe
    210   215   220
Ile Gly Ser Pro Pro Gly Tyr Val Gly His Glu Glu Gly Gly Gln Leu
225   230   235   240
Thr Lys Lys Leu Lys Gln Cys Pro Asn Ala Val Val Leu Phe Asp Glu
                245   250   255
Val Asp Lys Ala His Pro Asp Val Leu Thr Ile Met Leu Gln Leu Phe
            260   265   270
Asp Glu Gly Arg Leu Thr Asp Gly Lys Gly Lys Thr Ile Asp Cys Lys
        275   280   285
Asp Ala Ile Phe Ile Met Thr Ser Asn Val Ala Ser Asp Glu Ile Ala
    290   295   300
Gln His Ala Leu Gln Leu Arg Gln Glu Ala Leu Glu Met Ser Arg Asn
305   310   315   320
Arg Ile Ala Glu Asn Leu Gly Asp Val Gln Ile Ser Asp Lys Ile Thr
                325   330   335
Ile Ser Lys Asn Phe Lys Glu Asn Val Ile Arg Pro Ile Leu Lys Ala
            340   345   350
His Phe Arg Arg Asp Glu Phe Leu Gly Arg Ile Asn Glu Ile Val Tyr
        355   360   365
Phe Leu Pro Phe Cys His Ser Glu Leu Ile Gln Leu Val Asn Lys Glu
    370   375   380
Leu Asn Phe Trp Ala Lys Arg Ala Lys Gln Arg His Asn Ile Thr Leu
385   390   395   400
Leu Trp Asp Arg Glu Val Ala Asp Val Leu Val Asp Gly Tyr Asn Val
                405   410   415
His Tyr Gly Ala Arg Ser Ile Lys His Glu Val Glu Arg Arg Val Gly
            420   425   430
Asn Gln Leu Ala Ala Ala Tyr Glu Gln Asp Leu Leu Pro Gly Gly Cys

```
            435                    440                  445
Thr Leu Arg Ile Thr Val Glu Asp Ser Asp Lys Gln Leu Leu Lys Ser
    450                    455                  460
Pro Glu Leu Pro Ser Pro Gln Ala Glu Lys Arg Leu Pro Lys Leu Arg
465                    470                  475                  480
Leu Glu Ile Ile Asp Lys Asp Ser Lys Thr Arg Arg Leu Asp Ile Arg
                485                  490                  495
Ala Pro Leu His Pro Glu Lys Val Cys Asn Thr Ile
            500                  505       508
```

```
        <210> 1136
        <211> 81
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1136
Ser Ser Cys Asp Arg Glu Arg His Gly Ser Leu Gly Met Met Ser Gly
1               5                  10                  15
Ser Phe Ile Leu Cys Leu Ala Leu Val Thr Arg Trp Ser Pro Gln Ala
            20                  25                  30
Ser Ser Val Pro Leu Ala Val Tyr Glu Ser Lys Thr Arg Lys Ser Tyr
        35                  40                  45
Arg Ser Gln Arg Asp Arg Asp Gly Lys Asp Arg Ser Gln Gly Met Gly
    50                  55                  60
Leu Ser Leu Leu Val Glu Thr Arg Lys Leu Leu Leu Ser Ala Asn Gln
65                  70                  75                  80
Gly
81
```

```
        <210> 1137
        <211> 260
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1137
His Thr Pro Met Ala Phe Phe Leu Ser Phe Leu Ser Thr Ser Glu Thr
1               5                  10                  15
Val Tyr Thr Phe Val Ile Leu Pro Lys Met Leu Ile Asn Leu Leu Ser
            20                  25                  30
Val Ala Arg Thr Ile Ser Phe Asn Cys Cys Ala Leu Gln Met Phe Phe
        35                  40                  45
Phe Leu Gly Phe Ala Ile Thr Asn Cys Leu Leu Leu Gly Val Met Gly
    50                  55                  60
Tyr Asp Arg Tyr Ala Ala Ile Cys His Pro Leu His Tyr Pro Thr Leu
65                  70                  75                  80
Met Ser Trp Gln Val Cys Gly Lys Leu Ala Ala Ala Cys Ala Ile Gly
                85                  90                  95
Gly Phe Leu Ala Ser Leu Thr Val Val Asn Leu Val Phe Ser Leu Pro
            100                 105                 110
Phe Cys Ser Thr Asn Lys Val Asn His Tyr Phe Cys Asp Ile Ser Ala
        115                 120                 125
Val Ile Leu Leu Ala Cys Thr Asn Thr Asp Val Asn Gly Phe Val Ile
    130                 135                 140
Phe Ile Cys Gly Val Leu Val Leu Val Val Pro Phe Leu Phe Ile Cys
```

145   150   155   160
Val Ser Tyr Phe Cys Ile Leu Arg Thr Ile Leu Lys Ile Pro Ser Ala
                165   170   175
Glu Gly Arg Arg Lys Ala Phe Ser Thr Cys Ala Ser His Leu Ser Val
            180   185   190
Val Ile Val His Tyr Gly Cys Ala Ser Phe Ile Tyr Leu Arg Pro Thr
        195   200   205
Ala Asn Tyr Val Ser Asn Lys Asp Arg Leu Val Thr Val Thr Tyr Thr
    210   215   220
Ile Val Thr Pro Leu Leu Asn Pro Met Val Tyr Ser Leu Arg Asn Lys
225   230   235   240
Asp Val Gln Leu Ala Ile Arg Lys Val Leu Gly Lys Lys Gly Ser Leu
                245   250   255
Lys Leu Tyr Asn
            260

        <210> 1138
        <211> 393
        <212> Amino acid
        <213> Homo sapiens

        <400> 1138
Arg Pro Pro Ala Ala Thr Arg Tyr Pro Arg Glu Lys Leu Lys Ser Met
1   5   10   15
Thr Ser Arg Asp Asn Tyr Lys Ala Gly Ser Arg Glu Ala Ala Ala Ala
                20   25   30
Ala Ala Ala Ala Val Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Glu
            35   40   45
Pro Tyr Pro Val Ser Gly Ala Lys Arg Lys Tyr Leu Glu Asp Ser Asp
        50   55   60
Pro Glu Arg Ser Asp Tyr Glu Glu Gln Gln Leu Gln Glu Glu Glu Glu
    65   70   75   80
Ala Arg Lys Val Lys Ser Gly Ile Arg Gln Met Arg Leu Phe Ser Gln
                85   90   95
Asp Glu Cys Ala Lys Ile Glu Ala Arg Ile Asp Glu Val Val Ser Arg
            100   105   110
Ala Glu Lys Gly Leu Tyr Asn Glu His Thr Val Asp Arg Ala Pro Leu
        115   120   125
Arg Asn Lys Tyr Phe Phe Gly Glu Gly Tyr Thr Tyr Gly Ala Gln Leu
    130   135   140
Gln Lys Arg Gly Pro Gly Gln Glu Arg Leu Tyr Pro Pro Gly Asp Val
145   150   155   160
Asp Glu Ile Pro Glu Trp Val His Gln Leu Val Ile Gln Lys Leu Val
                165   170   175
Glu His Arg Val Ile Pro Glu Gly Phe Val Asn Ser Ala Val Ile Asn
            180   185   190
Asp Tyr Gln Pro Gly Gly Cys Ile Val Ser His Val Asp Pro Ile His
        195   200   205
Ile Phe Glu Arg Pro Ile Val Ser Val Ser Phe Phe Ser Asp Ser Ala
    210   215   220
Leu Cys Phe Gly Cys Lys Phe Gln Phe Lys Pro Ile Arg Val Ser Glu
225   230   235   240
Pro Val Leu Ser Leu Pro Val Arg Arg Gly Ser Val Thr Val Leu Ser
                245   250   255
Gly Tyr Ala Ala Asp Glu Ile Thr His Cys Ile Arg Pro Gln Asp Ile
            260   265   270
Lys Glu Arg Arg Ala Val Ile Ile Leu Arg Lys Thr Arg Leu Asp Ala
        275   280   285
Pro Arg Leu Glu Thr Lys Ser Leu Ser Ser Ser Val Leu Pro Pro Ser

667

```
        290                    295                    300
Tyr Ala Ser Asp Arg Leu Ser Gly Asn Asn Arg Asp Pro Ala Leu Lys
305                    310                    315                    320
Pro Lys Arg Ser His Arg Lys Ala Asp Pro Asp Ala Ala His Arg Pro
                 325                    330                    335
Arg Ile Leu Glu Met Asp Lys Glu Glu Asn Arg Arg Ser Val Leu Leu
              340                    345                    350
Pro Thr His Arg Arg Arg Gly Ser Phe Ser Ser Glu Asn Tyr Trp Arg
              355                    360                    365
Lys Ser Tyr Glu Ser Ser Glu Asp Cys Ser Glu Ala Ala Gly Ser Pro
         370                    375                    380
Ala Arg Lys Val Lys Met Arg Arg His
385                    390         393
```

```
        <210> 1139
        <211> 545
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1139
Val Thr Trp His Phe Tyr Phe Cys Ser Asp His Lys Asn Gly His Tyr
  1                 5                    10                    15
Ile Ile Pro Gln Met Ala Asp Arg Ser Arg Gln Lys Cys Met Ser Gln
                 20                    25                    30
Ser Leu Asp Leu Ser Glu Leu Ala Lys Ala Ala Lys Lys Lys Leu Gln
              35                    40                    45
Ala Leu Ser Asn Arg Leu Phe Glu Glu Leu Ala Met Asp Val Tyr Asp
         50                    55                    60
Glu Val Asp Arg Arg Glu Asn Asp Ala Val Trp Leu Ala Thr Gln Asn
65                    70                    75                    80
His Ser Thr Leu Val Thr Glu Arg Ser Ala Val Pro Phe Leu Pro Val
                 85                    90                    95
Asn Pro Glu Tyr Ser Ala Thr Arg Asn Gln Gly Arg Gln Lys Leu Ala
              100                   105                   110
Arg Phe Asn Ala Arg Glu Phe Ala Thr Leu Ile Ile Asp Ile Leu Ser
         115                   120                   125
Glu Ala Lys Arg Arg Gln Gln Gly Lys Ser Leu Ser Ser Pro Thr Asp
         130                   135                   140
Asn Leu Glu Leu Ser Leu Arg Ser Gln Ser Asp Leu Asp Asp Gln His
145                   150                   155                   160
Asp Tyr Asp Ser Val Ala Ser Asp Glu Asp Thr Asp Gln Glu Pro Leu
                 165                   170                   175
Arg Ser Thr Gly Ala Thr Arg Ser Asn Arg Ala Arg Ser Met Asp Ser
              180                   185                   190
Ser Asp Leu Ser Asp Gly Ala Val Thr Leu Gln Glu Tyr Leu Glu Leu
         195                   200                   205
Lys Lys Ala Leu Ala Thr Ser Glu Ala Lys Val Gln Gln Leu Met Lys
         210                   215                   220
Val Asn Ser Ser Leu Ser Asp Glu Leu Arg Arg Leu Gln Arg Glu His
225                   230                   235                   240
Phe Ala Pro Ile Ile His Lys Leu Gln Ala Glu Asn Leu Gln Leu Arg
                 245                   250                   255
Gln Pro Pro Gly Pro Val Pro Thr Pro Pro Leu Pro Ser Glu Arg Ala
              260                   265                   270
Glu His Thr Pro Met Ala Pro Gly Gly Ser Thr His Arg Arg Asp Arg
              275                   280                   285
Gln Ala Phe Ser Met Tyr Glu Pro Gly Ser Ala Leu Lys Pro Phe Gly
         290                   295                   300
Gly Pro Pro Gly Asp Glu Leu Thr Thr Arg Leu Gln Pro Phe His Ser
```

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```
305                    310                    315                    320
Thr Glu Leu Glu Asp Asp Ala Ile Tyr Ser Val His Val Pro Ala Gly
                325                    330                    335
Leu Tyr Arg Ile Arg Lys Gly Val Ser Ala Ser Ala Val Pro Phe Thr
            340                    345                    350
Pro Ser Ser Pro Leu Leu Ser Cys Ser Gln Glu Gly Ser Arg His Thr
            355                    360                    365
Ser Lys Leu Ser Arg His Gly Ser Gly Ala Asp Ser Asp Tyr Glu Asn
    370                    375                    380
Thr Gln Ser Gly Asp Pro Leu Leu Gly Leu Glu Gly Lys Arg Phe Leu
385                    390                    395                    400
Glu Leu Gly Lys Glu Glu Asp Phe His Pro Glu Leu Glu Ser Leu Asp
                405                    410                    415
Gly Asp Leu Asp Pro Gly Leu Pro Ser Thr Glu Asp Val Ile Leu Lys
            420                    425                    430
Thr Glu Gln Val Thr Lys Asn Ile Gln Glu Leu Leu Arg Ala Ala Gln
    435                    440                    445
Glu Phe Lys His Asp Ser Phe Val Pro Cys Ser Glu Lys Ile His Leu
    450                    455                    460
Ala Val Thr Glu Met Ala Ser Leu Phe Pro Lys Arg Pro Ala Leu Glu
465                    470                    475                    480
Pro Val Arg Ser Ser Leu Arg Leu Leu Asn Ala Ser Ala Tyr Arg Leu
            485                    490                    495
Gln Ser Glu Cys Arg Lys Thr Val Pro Pro Glu Pro Gly Ala Pro Val
    500                    505                    510
Asp Phe Gln Leu Leu Thr Gln Gln Val Ile Gln Cys Ala Tyr Asp Ile
    515                    520                    525
Ala Lys Ala Ala Lys Gln Leu Val Thr Ile Thr Thr Arg Glu Lys Lys
    530                    535                    540
Gln
545
```

```
<210> 1140
<211> 621
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1140
Arg Tyr Leu Ser Tyr Gly Ser Gly Pro Lys Arg Phe Pro Leu Val Asp
 1               5                    10                   15
Val Leu Gln Tyr Ala Leu Glu Phe Ala Ser Ser Lys Pro Val Cys Thr
                20                   25                   30
Ser Pro Val Asp Asp Ile Asp Ala Ser Ser Pro Pro Ser Gly Ser Ile
        35                   40                   45
Pro Ser Gln Thr Leu Pro Ser Thr Thr Glu Gln Gln Gly Ala Leu Ser .
    50                   55                   60
Ser Glu Leu Pro Ser Thr Ser Pro Ser Ser Val Ala Ala Ile Ser Ser
65                   70                   75                   80
Arg Ser Val Ile His Lys Pro Phe Thr Gln Ser Arg Ile Pro Pro Asp
                85                   90                   95
Leu Pro Met His Pro Ala Pro Arg His Ile Thr Glu Glu Glu Leu Ser
            100                  105                  110
Val Leu Glu Ser Cys Leu His Arg Trp Arg Thr Glu Ile Glu Asn Asp
        115                  120                  125
Thr Arg Asp Leu Gln Glu Ser Ile Ser Arg Ile His Arg Thr Ile Glu
    130                  135                  140
Leu Met Tyr Ser Asp Lys Ser Met Ile Gln Val Pro Tyr Arg Leu His
145                  150                  155                  160
Ala Val Leu Val His Glu Gly Gln Ala Asn Ala Gly His Tyr Trp Ala
```

```
                      165                    170                    175
Tyr Ile Phe Asp His Arg Glu Ser Arg Trp Met Lys Tyr Asn Asp Ile
        180                    185                    190
Ala Val Thr Lys Ser Ser Trp Glu Glu Leu Val Arg Asp Ser Phe Gly
        195                    200                    205
Gly Tyr Arg Asn Ala Ser Ala Tyr Cys Leu Met Tyr Ile Asn Asp Lys
    210                    215                    220
Ala Gln Phe Leu Ile Gln Glu Glu Phe Asn Lys Glu Thr Gly Gln Pro
225                    230                    235                    240
Leu Val Gly Ile Glu Thr Leu Pro Pro Asp Leu Arg Asp Phe Val Glu
                245                    250                    255
Glu Asp Asn Gln Arg Phe Glu Lys Glu Leu Glu Glu Trp Asp Ala Gln
            260                    265                    270
Leu Ala Gln Lys Ala Leu Gln Glu Lys Leu Leu Ala Ser Gln Lys Leu
        275                    280                    285
Arg Glu Ser Glu Thr Ser Val Thr Thr Ala Gln Ala Ala Gly Asp Pro
    290                    295                    300
Lys Tyr Leu Glu Gln Pro Ser Arg Ser Asp Phe Ser Lys His Leu Lys
305                    310                    315                    320
Glu Glu Thr Ile Gln Ile Ile Thr Lys Ala Ser His Glu His Glu Asp
                325                    330                    335
Lys Ser Pro Glu Thr Val Leu Gln Ser Ala Ile Lys Leu Glu Tyr Ala
            340                    345                    350
Arg Leu Val Lys Leu Ala Gln Glu Asp Thr Pro Pro Glu Thr Asp Tyr
        355                    360                    365
Arg Leu His His Val Val Val Tyr Phe Ile Gln Asn Gln Ala Pro Lys
    370                    375                    380
Lys Ile Ile Glu Lys Thr Leu Leu Glu Gln Phe Gly Asp Arg Asn Leu
385                    390                    395                    400
Ser Phe Asp Glu Arg Cys His Asn Ile Met Lys Val Ala Gln Ala Lys
                405                    410                    415
Leu Glu Met Ile Lys Pro Glu Glu Val Asn Leu Glu Glu Tyr Glu Glu
            420                    425                    430
Trp His Gln Asp Tyr Arg Lys Phe Arg Glu Thr Thr Met Tyr Leu Ile
        435                    440                    445
Ile Gly Leu Glu Asn Phe Gln Arg Glu Ser Tyr Ile Asp Ser Leu Leu
    450                    455                    460
Phe Leu Ile Cys Ala Tyr Gln Asn Asn Lys Glu Leu Leu Ser Lys Gly
465                    470                    475                    480
Leu Tyr Arg Gly His Asp Glu Glu Leu Ile Ser His Tyr Arg Arg Glu
            485                    490                    495
Cys Leu Leu Lys Leu Asn Glu Gln Ala Ala Glu Leu Phe Glu Ser Gly
        500                    505                    510
Glu Asp Arg Glu Val Asn Asn Gly Leu Ile Ile Met Asn Glu Phe Ile
        515                    520                    525
Val Pro Phe Leu Pro Leu Leu Val Asp Glu Met Glu Glu Lys Asp
    530                    535                    540
Ile Leu Ala Val Glu Asp Met Arg Asn Arg Trp Cys Ser Tyr Leu Gly
545                    550                    555                    560
Gln Glu Met Glu Pro His Leu Gln Glu Lys Leu Thr Asp Phe Leu Pro
                565                    570                    575
Lys Leu Leu Asp Cys Ser Met Glu Ile Lys Ser Phe His Glu Pro Pro
        580                    585                    590
Lys Leu Pro Ser Tyr Ser Thr His Glu Leu Cys Glu Arg Phe Ala Arg
        595                    600                    605
Ile Met Leu Ser Leu Ser Arg Thr Pro Ala Asp Gly Arg
    610                    615                    620 621
```

<210> 1141
<211> 154
<212>Amino acid
<213> Homo sapiens

```
       <400> 1141
Ala Gln Val Tyr Val Arg Met Asp Ser Phe Asp Glu Asp Leu Ala Arg
1               5                   10                  15
Pro Ser Gly Leu Leu Ala Gln Glu Arg Lys Leu Cys Arg Asp Leu Val
            20                  25                  30
His Ser Asn Lys Lys Glu Gln Glu Phe Arg Ser Ile Phe Gln His Ile
        35                  40                  45
Gln Ser Ala Gln Ser Gln Arg Ser Pro Ser Glu Leu Phe Ala Gln His
    50                  55                  60
Met Val Pro Ile Val His His Val Lys Glu His His Phe Gly Ser Ser
65                  70                  75                  80
Gly Met Thr Leu His Glu Arg Phe Thr Lys Tyr Leu Lys Arg Gly Thr
                85                  90                  95
Glu Gln Glu Ala Ala Lys Asn Lys Lys Ser Pro Glu Ile His Arg Arg
            100                 105                 110
Ile Asp Ile Ser Pro Ser Thr Phe Arg Lys His Gly Leu Ala His Asp
        115                 120                 125
Glu Met Lys Ser Pro Arg Glu Pro Gly Tyr Lys Asp Gly His Asn Ser
    130                 135                 140
Lys Asn Glu Leu Gln Arg Val Asn Phe Tyr
145                 150             154


       <210> 1142
       <211> 121
       <212>Amino acid
       <213> Homo sapiens




       <400> 1142
Thr Tyr Thr Phe Cys Phe Ser Leu Met Ile Ile Leu Leu Thr Ile Ile
1               5                   10                  15
Gln Gly Leu Ile Leu Glu Ala Phe Gly Glu Leu Arg Asp Gln Leu Asp
            20                  25                  30
Gln Val Lys Glu Asp Met Glu Thr Lys Cys Phe Ile Cys Gly Ile Gly
        35                  40                  45
Asn Asp Tyr Phe Asp Thr Val Pro His Gly Phe Glu Thr His Thr Leu
    50                  55                  60
Gln Glu His Asn Leu Ala Asn Tyr Leu Phe Phe Leu Met Tyr Leu Ile
65                  70                  75                  80
Asn Lys Asp Glu Thr Glu His Thr Gly Gln Glu Ser Tyr Val Trp Lys
                85                  90                  95
Met Tyr Gln Glu Arg Cys Trp Glu Phe Phe Pro Ala Gly Asp Cys Phe
            100                 105                 110
Arg Lys Gln Tyr Glu Asp Gln Leu Asn
        115                 120 121


       <210> 1143
       <211> 851
       <212>Amino acid
       <213> Homo sapiens
```

```
         <400> 1143
Phe Arg Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe Gly Ala Gly Leu
 1               5                  10                  15
Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu Glu Glu Gly Val
            20                  25                  30
Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu Lys His Gly Pro
        35                  40                  45
Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly Leu Leu Leu Val
    50                  55                  60
Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln Tyr Arg Asp Val
65                  70                  75                  80
Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile Thr Asn Glu Asn
                85                  90                  95
Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu Phe Val Ser Leu
            100                 105                 110
Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr Ser Gly Val Pro
        115                 120                 125
Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr Ala Phe Ser Glu
    130                 135                 140
Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser Ile Pro Gln His
145                 150                 155                 160
Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu Arg Val Val Met
                165                 170                 175
Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val Val Thr Ser Val
            180                 185                 190
Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg Thr Gln Asp Asn
        195                 200                 205
Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu Leu Met Arg Phe
    210                 215                 220
Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala His Ala Arg Cys
225                 230                 235                 240
Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu Ser Leu Thr Phe
                245                 250                 255
Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly Arg His Leu Val
            260                 265                 270
Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His Ala Leu Val Gln
        275                 280                 285
Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr Phe His Ser Ser
    290                 295                 300
Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr Glu Arg Arg His
305                 310                 315                 320
Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg Met Ser Ser Cys
                325                 330                 335
Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn Ser Pro Tyr Tyr
            340                 345                 350
Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp Asn Ile Glu Val
        355                 360                 365
Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe Phe Tyr Leu Leu
    370                 375                 380
Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp Tyr Val Glu Ile
385                 390                 395                 400
Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe Val Val Thr Ser
            405                 410                 415
Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp Gln Ser Tyr Thr
        420                 425                 430
Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp Ser Ser Asp Pro
    435                 440                 445
Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys Ile Arg Lys Glu
    450                 455                 460
Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His Ser Asp Glu Leu
465                 470                 475                 480
Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys Lys Asn Lys Phe
            485                 490                 495
Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Leu Asn Asp Cys Gly Asp
```

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```
                     500                      505                      510
Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln Thr Phe Arg Cys
        515                      520                      525
Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys Asn Gly Lys·Asp
        530                      535                      540
Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro Lys Val Asn Val
545                      550                      555                      560
Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn Gly Leu Cys Leu
                565                      570                      575
Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp Cys Ser Asp Gly
        580                      585                      590
Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser Phe Thr Arg Gln
        595                      600                      605
Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp
        610                      615                      620
Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser
625                      630                      635                      640
Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp
                645                      650                      655
Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu
                660                      665                      670
Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg
        675                      680                      685
Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe
        690                      695                      700
Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser
705                      710                      715                      720
Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro
                725                      730                      735
Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Tyr Gly
        740                      745                      750
Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn
        755                      760                      765
Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met
        770                      775                      780
Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp
785                      790                      795                      800
Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln
                805                      810                      815
Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro
        820                      825                      830
Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn
        835                      840                      845
Thr Gly Val
850 851
```

```
<210> 1144
<211> 346
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(346)
<223> X = any amino acid or stop code




<400> 1144
Arg His Glu Glu Asp Leu Gly Asn Leu Trp Glu Asn Thr Arg Phe Thr
 1               5                       10                      15
```

```
Asp Cys Ser Phe Phe Val Arg Gly Gln Glu Phe Lys Ala His Lys Ser
         20                  25                  30
Val Leu Ala Ala Arg Ser Pro Val Phe Asn Ala Met Phe Glu His Glu
         35                  40                  45
Met Glu Glu Ser Lys Lys Asn Arg Val Glu Ile Asn Asp Leu Asp Pro
         50                  55                  60
Glu Val Phe Lys Glu Met Met Arg Phe Ile Tyr Thr Gly Arg Ala Pro
65                  70                  75                  80
Asn Leu Asp Lys Met Ala Asp Asn Leu Leu Ala Ala Ala Asp Lys Tyr
                 85                  90                  95
Ala Leu Glu Arg Leu Lys Val Met Cys Glu Lys Ala Leu Cys Ser Asn
         100                 105                 110
Leu Ser Val Glu Asn Val Ala Asp Thr Leu Val Leu Ala Asp Leu His
         115                 120                 125
Ser Ala Glu Gln Leu Lys Ala Gln Ala Ile Asp Phe Ile Asn Arg Cys
         130                 135                 140
Ser Val Leu Arg Gln Leu Gly Cys Lys Asp Gly Lys Asn Trp Asn Ser
145                 150                 155                 160
Asn Gln Ala Thr Asp Ile Met Glu Thr Ser Gly Gly Lys Ser Met Ile
                 165                 170                 175
Gln Ser His Pro His Leu Val Ala Glu Ala Phe Arg Ala Leu Ala Ser
         180                 185                 190
Ala Gln Gly Pro Gln Phe Gly Ile Pro Arg Lys Arg Leu Lys Gln Ser
         195                 200                 205
Xaa Asn Leu Gly Asn Leu Trp Glu Asn Thr Arg Phe Thr Asp Cys Ser
210                 215                 220
Phe Phe Val Arg Gly Gln Glu Phe Lys Ala His Lys Ser Val Leu Ala
225                 230                 235                 240
Ala Arg Ser Pro Val Phe Asn Ala Met Phe Glu His Glu Met Glu Glu
                 245                 250                 255
Ser Lys Lys Asn Arg Val Glu Ile Asn Asp Leu Asp Pro Glu Val Phe
         260                 265                 270
Lys Glu Met Met Arg Phe Ile Tyr Thr Gly Arg Ala Pro Asn Leu Asp
         275                 280                 285
Lys Met Ala Asp Asn Leu Leu Ala Ala Ala Asp Lys Tyr Ala Leu Glu
         290                 295                 300
Arg Leu Lys Val Met Cys Glu Lys Ala Leu Cys Ser Asn Leu Ser Val
305                 310                 315                 320
Glu Asn Val Ala Asp Thr Leu Val Leu Ala Asp Leu His Ser Gly Arg
                 325                 330                 335
Thr Val Glu Ser Thr Ser His Arg Leu Tyr
         340                 345 346
```

```
<210> 1145
<211> 339
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(339)
<223> X = any amino acid or stop code
```

```
<400> 1145
Gln Arg Gly Gly Ile Pro Gly Lys Phe Gln Glu Asp Ser Gly Ser Val
1                   5                   10                  15
Asp Trp Ala Leu Gly Pro Phe Trp Gly Ile Phe Gln Ala Asp Phe Gly
         20                  25                  30
Cys Met Arg Phe Tyr Leu Ser Ala Gln Thr Ser Asp Pro Val Leu Arg
```

```
                 35                        40                        45
Met Xaa Trp Gly Pro Ser Pro Ile Ser His Pro Thr Ser Leu Cys Pro
         50                        55                        60
Gly Gly Gly Gly Ala Gly Gln Thr Thr Gly Ser Leu Cys Leu Gly Gln
         65                        70                        75            80
Gln Cys Cys Pro Leu Ser Cys Pro Asn Ile Pro Ser Arg His Lys Arg
                     85                        90                    95
Trp Arg Leu Xaa Ala Ala Leu Val Ala Gly Ser Arg Gly Ser Cys Thr
                100                       105                      110
Leu Arg Ser Xaa Arg Xaa Arg Thr Pro Leu Pro Val Thr Arg Asn Leu
            115                       120                      125
Pro Arg Cys His Leu His Leu His Pro Thr Gly Asp Leu Arg Val His
        130                       135                      140
Val His Gln His Cys Leu Leu His Gly His Val Pro Pro Gly Ala Ala
145                       150                       155                  160
Leu Leu Gln Cys Gly Gly Cys Asp Leu Arg Gly Glu Ala Ala Gly Leu
                165                       170                      175
Leu Phe Leu Gly His Ala Cys Leu Arg Gly Ser Val Asn Leu Arg Arg
                180                       185                      190
Asp Gln Trp Leu Pro Val Pro Tyr Ser Arg Leu Cys Phe Ser Gly Ala
            195                       200                      205
Arg Glu Gly His Leu Pro Ser Leu Leu Ala Met Ile His Val Arg His
        210                       215                      220
Cys Thr Pro Ile Pro Ala Leu Leu Val Cys Pro Ile Lys Val Asn Leu
225                       230                       235                  240
Leu Ile Pro Val Ala Tyr Leu Val Phe Trp Ala Phe Leu Leu Val Phe
                245                       250                      255
Ser Phe Ile Ser Glu His Met Val Cys Gly Val Gly Val Ile Ile Ile
                260                       265                      270
Leu Thr Gly Val Pro Ile Phe Phe Leu Gly Val Phe Trp Arg Ser Lys
            275                       280                      285
Pro Lys Cys Val His Arg Leu Thr Glu Ser Met Thr His Trp Gly Gln
        290                       295                      300
Glu Leu Cys Phe Val Val Tyr Pro Gln Asp Ala Pro Glu Glu Glu Glu
305                       310                       315                  320
Asn Gly Pro Cys Pro Pro Ser Leu Leu Pro Ala Thr Asp Lys Pro Ser
                325                       330                      335
Lys Pro Gln
        339
```

```
<210> 1146
<211> 425
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(425)
<223> X = any amino acid or stop code


<400> 1146
Ala Ala Ala Leu Val Ala Glu Tyr Leu Ala Leu Leu Glu Asp His Arg
  1               5                        10                       15
His Leu Pro Val Gly Cys Val Ser Phe Gln Asn Ile Ser Ser Asn Val
            20                        25                       30
Leu Glu Glu Ser Ala Ile Ser Asp Asp Ile Leu Ser Pro Asp Glu Glu
            35                        40                       45
Gly Phe Cys Ser Gly Lys His Phe Thr Glu Leu Gly Leu Val Gly Leu
        50                        55                       60
```

```
Leu Glu Gln Ala Ala Gly Tyr Phe Thr Met Gly Gly Leu Tyr Glu Ala
65                  70                  75                  80
Val Asn Glu Val Tyr Lys Asn Leu Ile Pro Ile Leu Glu Ala His Arg
                85                  90                  95
Asp Tyr Lys Lys Leu Ala Ala Val His Gly Lys Leu Gln Glu Ala Phe
            100                 105                 110
Thr Lys Ile Met His Gln Ser Ser Gly Trp Glu Arg Val Phe Gly Thr
        115                 120                 125
Tyr Phe Arg Val Gly Phe Tyr Gly Ala His Phe Gly Asp Leu Asp Glu
    130                 135                 140
Gln Glu Phe Val Tyr Lys Glu Pro Ser Ile Thr Lys Leu Ala Glu Ile
145                 150                 155                 160
Ser His Arg Leu Glu Glu Phe Tyr Thr Glu Arg Phe Gly Asp Asp Val
            165                 170                 175
Val Glu Ile Ile Lys Asp Ser Asn Pro Val Asp Lys Ser Lys Leu Asp
        180                 185                 190
Ser Gln Lys Ala Tyr Ile Gln Ile Thr Tyr Val Glu Pro Tyr Phe Asp
    195                 200                 205
Thr Tyr Glu Leu Lys Asp Arg Val Thr Tyr Phe Asp Arg Asn Tyr Gly
    210                 215                 220
Leu Arg Thr Phe Leu Phe Cys Thr Pro Phe Thr Pro Asp Gly Arg Ala
225                 230                 235                 240
His Gly Glu Leu Pro Glu Gln His Lys Arg Lys Thr Leu Leu Ser Thr
            245                 250                 255
Asp His Ala Phe Pro Tyr Ile Lys Thr Arg Ile Arg Val Cys His Arg
        260                 265                 270
Glu Glu Thr Val Leu Thr Pro Val Glu Val Ala Ile Glu Asp Met Gln
        275                 280                 285
Lys Lys Thr Arg Glu Leu Ala Phe Ala Thr Glu Gln Asp Pro Pro Asp
    290                 295                 300
Ala Lys Met Leu Gln Met Val Leu Gln Gly Ser Val Gly Pro Thr Val
305                 310                 315                 320
Asn Gln Gly Pro Leu Glu Val Ala Gln Val Phe Leu Ala Glu Ile Pro
            325                 330                 335
Glu Asp Pro Lys Leu Phe Arg His His Asn Lys Leu Arg Leu Cys Phe
            340                 345                 350
Lys Asp Phe Xaa Lys Lys Cys Glu Asp Ala Leu Arg Lys Asn Lys Ala
        355                 360                 365
Leu Ile Gly Pro Asp Gln Lys Glu Tyr His Arg Glu Leu Glu Arg Asn
    370                 375                 380
Tyr Cys Arg Leu Arg Glu Ala Leu Gln Pro Leu Leu Thr Gln Arg Leu
385                 390                 395                 400
Pro Gln Leu Met Ala Pro Thr Pro Gly Leu Arg Asn Ser Leu Asn
            405                 410                 415
Arg Ala Ser Phe Arg Lys Ala Asp Leu
            420                 425
```

```
<210> 1147
<211> 198
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(198)
<223> X = any amino acid or stop code
```

```
<400> 1147
Gly Glu Gly Gln Gln Trp Gln Ser Thr Pro Leu Ser Pro Leu Gln Pro
```

```
 1                    5                   10                  15
Thr Val Ala Asp Phe Leu Asn Leu Ala Trp Trp Thr Ser Ala Ala Ala
            20                  25                  30
Trp Xaa Val Leu Ser Gly Arg Trp Val Glu Lys Val Leu Pro Gly Arg
            35                  40                  45
Glu Gly Ser Glu Glu Lys Xaa Gly Met Ala Ser Ser Ser Ala Asp His
    50                  55                  60
Leu His Ser Ala Pro Arg Ala Leu Gln Ser Leu Phe Gln Gln Leu Leu
65                  70                  75                  80
Tyr Gly Leu Ile Tyr His Ser Trp Phe Gln Ala Gly Arg Xaa Gly Phe
                85                  90                  95
Gly Gly Ala Ser Ser Ser Pro Gly Pro Gln Ser Glu Leu Arg Arg Leu
            100                 105                 110
His Gly Glu Gly Gly Val Tyr Asp Xaa Gly Arg Pro Glu Thr Leu Pro
            115                 120                 125
Gly Ser Val Gly Gly Ala Glu Ala Leu Trp Ala Leu Ala Asp Pro Ala
    130                 135                 140
Glu Ala Glu Gly Ser Pro Glu Thr Arg Glu Ser Ser Cys Val Met Lys
145                 150                 155                 160
Gln Thr Gln Tyr Tyr Phe Gly Ser Val Asn Ala Ser Tyr Asn Ala Ile
                165                 170                 175
Ile Asp Cys Gly Asn Cys Ser Arg Cys Trp Gln Trp Gly Gly Thr Arg
            180                 185                 190
Gly Gln Gly Arg Asn Leu
        195         198
```

```
<210> 1148
<211> 317
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1148
Val Ala Gly Ile Pro Ala Cys Phe Asp Asn Phe Thr Glu Ala Leu Ala
1               5                   10                  15
Glu Thr Ala Cys Arg Gln Met Gly Tyr Ser Ser Lys Pro Thr Phe Arg
            20                  25                  30
Ala Val Glu Ile Gly Pro Asp Gln Asp Leu Asp Val Val Glu Ile Thr
            35                  40                  45
Glu Asn Ser Gln Glu Leu Arg Met Arg Asn Ser Ser Gly Pro Cys Leu
    50                  55                  60
Ser Gly Ser Leu Val Ser Leu His Cys Leu Ala Cys Gly Glu Ser Leu
65                  70                  75                  80
Lys Thr Pro Arg Val Val Gly Gly Glu Glu Ala Ser Val Asp Ser Trp
            85                  90                  95
Pro Trp Gln Val Ser Ile Gln Tyr Asp Lys Gln His Val Cys Gly Gly
            100                 105                 110
Ser Ile Leu Asp Pro His Trp Val Leu Thr Ala Ala His Cys Phe Arg
    115                 120                 125
Lys His Thr Asp Val Phe Asn Trp Lys Val Arg Ala Gly Ser Asp Lys
130                 135                 140
Leu Gly Ser Phe Pro Ser Leu Ala Val Ala Lys Ile Ile Ile Ile Glu
145                 150                 155                 160
Phe Asn Pro Met Tyr Pro Lys Asp Asn Asp Ile Ala Leu Met Lys Leu
                165                 170                 175
Gln Phe Pro Leu Thr Phe Ser Gly Thr Val Arg Pro Ile Cys Leu Pro
            180                 185                 190
Phe Phe Asp Glu Glu Leu Thr Pro Ala Thr Pro Leu Trp Ile Ile Gly
    195                 200                 205
Trp Gly Phe Thr Lys Gln Asn Gly Gly Lys Met Ser Asp Ile Leu Leu
```

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```
        210                    215                    220
Gln Ala Ser Val Gln Val Ile Asp Ser Thr Arg Cys Asn Ala Asp Asp
225                    230              .       235                    240
Ala Tyr Gln Gly Glu Val Thr Glu Lys Met Met Cys Ala Gly Ile Pro
            245                    250                    255
Glu Gly Gly Val Asp Thr Cys Gln Gly Asp Ser Gly Gly Pro Leu Met
            260              .       265                    270 ,
Tyr Gln Ser Asp Gln Trp His Val Val Gly Ile Val Ser Trp Gly Tyr
            275                    280                    285
Gly Cys Gly Gly Pro Ser Thr Pro Gly Val Tyr Thr Lys Val Ser Ala
            290                    295                    300
Tyr Leu Asn Trp Ile Tyr Asn Val Trp Lys Ala Glu Leu
305                    310                    315     317
```

```
        <210> 1149
        <211> 320
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1149
Thr Ile Ser Thr Val Arg Trp Asn Ser Arg Ile Gly Met Val Leu Gly
 1                   5                   10       .           15
Val Ala Ile Gln Lys Arg Ala Val Pro Gly Leu Tyr Ala Phe Glu Glu
            20                    25                    30
Ala Tyr Ala Arg Ala Asp Lys Glu Ala Pro Arg Pro Cys His Lys Gly
            35                    40                    45  .
Ser Trp Cys Ser Ser Asn Gln Leu Cys Arg Glu Cys Gln Ala Phe Met
        50                    55                    60
Ala His Thr Met Pro Lys Leu Lys Ala Phe Ser Met Ser Ser Ala Tyr
65                    70                    75                    80
Asn Ala Tyr Arg Ala Val Tyr Ala Val Ala His Gly Leu His Gln Leu
                85                    90                    95
Leu Gly Cys Ala Ser Gly Ala Cys Ser Arg Gly Arg Val Tyr Pro Trp
            100                   105                   110
Gln Leu Leu Glu Gln Ile His Lys Val His Phe Leu Leu His Lys Asp
            115                   120                   125      .
Thr Val Ala Phe Asn Asp Asn Arg Asp Pro Leu Ser Ser Tyr Asn Ile
            130                   135                   140
Ile Ala Trp Asp Trp Asn Gly Pro Lys Trp Thr Phe Thr Val Leu Gly
145           '       150                   155                   160
Ser Ser Thr Trp Ser Pro Val Gln Leu Asn Ile Asn Glu Thr Lys Ile
                165                   170                   175
Gln Trp His Gly Lys Asp Asn Gln Val Pro Lys Ser Val Cys Ser Ser
            180                   185                   190      .
Asp Cys Leu Glu Gly His Gln Arg Val Val Thr Gly Phe His His Cys
            195                   200                   205
Cys Phe Glu Cys Val Pro Cys Gly Ala Gly Thr Phe Leu Asn Lys Ser
            210                   215                   220
Ser Tyr Leu Gly Lys Asp Leu Pro Glu Asn Tyr Asn Glu Ala Lys Cys
225              .       230                   235                    240
Val Thr Phe Ser Leu Leu Phe Asn Phe Val Ser Trp Ile Ala Phe Phe
            245                   250                   255
Thr Thr Ala Ser Val Tyr Asp Gly Lys Tyr Leu Pro Ala Ala Asn Met
            260              .       265                   270
Met Ala Gly Leu Ser Ser Leu Ser Ser Gly Phe Gly Gly Tyr Phe Leu
            275                   280                   285
Pro Lys Cys Tyr Val Ile Leu Cys Arg Pro Asp Leu Asn Ser Thr Glu
            290                   295                   300
His Phe Gln Ala Ser Ile Gln Asp Tyr Thr Arg Arg Cys Gly Ser Thr
```

305   310   315   320

```
<210> 1150
<211> 458
<212>Amino acid
<213> Homo sapiens


<400> 1150
Val Ala Arg Gly Ala Phe His Pro Lys Met Gly Pro Ser Phe Pro Ser
1               5                   10                  15
Pro Lys Pro Gly Ser Glu Arg Leu Ser Phe Val Ser Ala Lys Gln Ser
            20                  25                  30
Thr Gly Gln Asp Thr Glu Ala Glu Leu Gln Asp Ala Thr Leu Ala Leu
        35                  40                  45
His Gly Leu Thr Val Glu Asp Glu Gly Asn Tyr Thr Cys Glu Phe Ala
    50                  55                  60
Thr Phe Pro Lys Gly Ser Val Arg Gly Met Thr Trp Leu Arg Val Ile
65                  70                  75                  80
Ala Lys Pro Lys Asn Gln Ala Glu Ala Gln Lys Val Thr Phe Ser Gln
                85                  90                  95
Asp Pro Thr Thr Val Ala Leu Cys Ile Ser Lys Glu Gly Arg Pro Pro
            100                 105                 110
Ala Arg Ile Ser Trp Leu Ser Ser Leu Asp Trp Glu Ala Lys Glu Thr
        115                 120                 125
Gln Val Ser Gly Thr Leu Ala Gly Thr Val Thr Val Thr Ser Arg Phe
    130                 135                 140
Thr Leu Val Pro Ser Gly Arg Ala Asp Gly Val Thr Val Thr Cys Lys
145                 150                 155                 160
Val Glu His Glu Ser Phe Glu Glu Pro Ala Leu Ile Pro Val Thr Leu
                165                 170                 175
Ser Val Arg Tyr Pro Pro Glu Val Ser Ile Ser Gly Tyr Asp Asp Asn
            180                 185                 190
Trp Tyr Leu Gly Arg Thr Asp Ala Thr Leu Ser Cys Asp Val Arg Ser
        195                 200                 205
Asn Pro Glu Pro Thr Gly Tyr Asp Trp Ser Thr Thr Ser Gly Thr Phe
    210                 215                 220
Pro Thr Ser Ala Val Ala Gln Gly Ser Gln Leu Val Ile His Ala Val
225                 230                 235                 240
Asp Ser Leu Phe Asn Thr Thr Phe Val Cys Thr Val Thr Asn Ala Val
                245                 250                 255
Gly Met Gly Arg Ala Glu Gln Val Ile Phe Val Arg Glu Thr Pro Asn
            260                 265                 270
Thr Ala Gly Ala Gly Ala Thr Gly Gly Ile Ile Gly Gly Ile Ile Ala
        275                 280                 285
Ala Ile Ile Ala Thr Ala Asp Ala Thr Gly Ile Leu Ile Cys Arg Gln
    290                 295                 300
Gln Arg Lys Glu Gln Thr Leu Gln Gly Ala Glu Glu Asp Glu Asp Leu
305                 310                 315                 320
Glu Gly Pro Pro Ser Tyr Lys Pro Pro Thr Pro Lys Ala Lys Leu Glu
                325                 330                 335
Ala Gln Glu Met Pro Ser Gln Leu Phe Thr Leu Gly Ala Ser Glu His
            340                 345                 350
Ser Pro Leu Lys Thr Pro Tyr Phe Asp Ala Gly Ala Ser Cys Thr Glu
        355                 360                 365
Gln Glu Met Pro Arg Tyr His Glu Leu Pro Thr Leu Glu Glu Arg Ser
    370                 375                 380
Gly Pro Leu His Pro Gly Ala Thr Ser Leu Gly Ser Pro Ile Pro Val
```

679

```
385                      390                      395                      400
Pro Pro Gly Pro Pro Ala Val Glu Asp Val Ser Leu Asp Leu Glu Asp
                405                      410                      415
Glu Glu Gly Glu Glu Glu Glu Glu Tyr Leu Asp Lys Ile Asn Pro Ile
                420                      425                      430
Tyr Asp Ala Leu Ser Tyr Ser Ser Pro Ser Asp Ser Tyr Gln Gly Lys
                435                      440                      445
Gly Phe Val Met Ser Arg Ala Met Tyr Val
                450                      455      458
```

```
        <210> 1151
        <211> 608
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 1151
Gly Thr Arg Leu Arg Glu Asp Lys Asn His Asn Met Tyr Val Ala Gly
 1               5                        10                       15
Cys Thr Glu Val Glu Val Lys Ser Thr Glu Glu Ala Phe Glu Val Phe
                20                        25                       30
Trp Arg Gly Gln Lys Lys Arg Arg Ile Ala Asn Thr His Leu Asn Arg
                35                        40                       45
Glu Ser Ser Arg Ser His Ser Val Phe Asn Ile Lys Leu Val Gln Ala
        50                        55                       60
Pro Leu Asp Ala Asp Gly Asp Asn Val Leu Gln Glu Lys Glu Gln Ile
65                        70                       75                       80
Thr Ile Ser Gln Leu Ser Leu Val Asp Leu Ala Gly Ser Glu Arg Thr
                        85                        90                       95
Asn Arg Thr Arg Ala Glu Gly Asn Arg Leu Arg Glu Ala Gly Asn Ile
                100                       105                      110
Asn Gln Ser Leu Met Thr Leu Arg Thr Cys Met Asp Val Leu Arg Glu
                115                       120                      125
Asn Gln Met Tyr Gly Thr Asn Lys Met Val Pro Tyr Arg Asp Ser Lys
                130                       135                      140
Leu Thr His Leu Phe Lys Asn Tyr Phe Asp Gly Glu Gly Lys Val Arg
145                       150                       155                      160
Met Ile Val Cys Val Asn Pro Lys Ala Glu Asp Tyr Glu Glu Asn Leu
                165                       170                      175
Gln Val Met Arg Phe Ala Glu Val Thr Gln Glu Val Glu Val Ala Arg
                180                       185                      190
Pro Val Asp Lys Ala Ile Cys Gly Leu Thr Pro Gly Arg Arg Tyr Arg
                195                       200                      205
Asn Gln Pro Arg Gly Pro Ile Gly Asn Glu Pro Leu Val Thr Asp Val
                210                       215                      220
Val Leu Gln Ser Phe Pro Pro Leu Pro Ser Cys Glu Ile Leu Asp Ile
225                       230                       235                      240
Asn Asp Glu Gln Thr Leu Pro Arg Leu Ile Glu Ala Leu Glu Lys Arg
                245                       250                      255
His Asn Leu Arg Gln Met Met Ile Asp Glu Phe Asn Lys Gln Ser Asn
                260                       265                      270
Ala Phe Lys Ala Leu Leu Gln Glu Phe Asp Asn Ala Val Leu Ser Lys
                275                       280                      285
Glu Asn His Met Gln Gly Lys Leu Asn Glu Lys Glu Lys Met Ile Ser
                290                       295                      300
Gly Gln Lys Leu Glu Ile Glu Arg Leu Glu Lys Lys Asn Lys Thr Leu
305                       310                       315                      320
Glu Tyr Lys Ile Glu Ile Leu Glu Lys Thr Thr Thr Ile Tyr Glu Glu
                325                       330                      335
Asp Lys Arg Asn Leu Gln Gln Glu Leu Glu Thr Gln Asn Gln Lys Leu
```

```
                    340                 345                 350
Gln Arg Gln Phe Ser Asp Lys Arg Arg Leu Glu Ala Arg Leu Gln Gly
            355                 360                 365
Met Val Thr Glu Thr Thr Met Lys Trp Glu Lys Glu Cys Glu Arg Arg
            370                 375                 380
Val Ala Ala Lys Gln Leu Glu Met Gln Asn Lys Leu Trp Val Lys Asp
385                 390                 395                 400
Glu Lys Leu Lys Gln Leu Lys Ala Ile Val Thr Glu Pro Lys Thr Glu
                405                 410                 415
Lys Pro Glu Arg Pro Ser Arg Glu Arg Asp Arg Glu Lys Val Thr Gln
            420                 425                 430
Arg Ser Val Ser Pro Ser Pro Val Pro Leu Leu Phe Gln Pro Asp Gln
            435                 440                 445
Asn Ala Pro Pro Ile Arg Leu Arg His Arg Arg Ser Arg Ser Ala Gly
450                 455                 460
Asp Arg Trp Val Asp His Lys Pro Ala Ser Asn Met Gln Thr Glu Thr
465                 470                 475                 480
Val Met Gln Pro His Val Pro His Ala Ile Thr Val Ser Val Ala Asn
            485                 490                 495
Glu Lys Ala Leu Ala Lys Cys Glu Lys Tyr Met Leu Thr His Gln Glu
            500                 505                 510
Leu Ala Ser Asp Gly Glu Ile Glu Thr Lys Leu Ile Lys Gly Asp Ile
            515                 520                 525
Tyr Lys Thr Arg Gly Gly Gly Gln Ser Val Gln Phe Thr Asp Ile Glu
            530                 535                 540
Thr Leu Lys Gln Glu Ser Pro Asn Gly Ser Arg Lys Arg Arg Ser Ser
545                 550                 555                 560
Thr Val Ala Pro Ala Gln Pro Asp Gly Ala Glu Ser Glu Trp Thr Asp
            565                 570                 575
Val Glu Thr Arg Cys Ser Val Ala Val Glu Met Arg Ala Gly Ser Gln
            580                 585                 590
Leu Gly Pro Gly Tyr Gln His His Ala Gln Pro Lys Arg Lys Lys Pro
            595                 600                 605     608
```

<210> 1152
<211> 111
<212> Amino acid
<213> Homo sapiens

<400> 1152
```
Pro Phe Ser Ser Ser Ser Val Ser Ser Lys Gly Ser Asp Pro Phe Gly
1               5                   10                  15
Thr Leu Asp Pro Phe Gly Ser Gly Ser Phe Asn Ser Ala Glu Gly Phe
            20                  25                  30
Ala Asp Phe Ser Gln Met Ser Lys Gly Lys Ser Thr Pro Val Ser Gln
            35                  40                  45
Leu Gly Ser Ala Asp Phe Pro Glu Ala Pro Asp Pro Phe Gln Pro Leu
    50                  55                  60
Gly Ala Asp Ser Gly Asp Pro Phe Gln Ser Lys Lys Gly Phe Gly Asp
65                  70                  75                  80
Pro Phe Ser Gly Lys Asp Pro Phe Val Pro Ser Ser Ala Ala Lys Pro
            85                  90                  95
Ser Lys Ala Ser Ala Ser Gly Phe Ala Asp Phe Thr Ser Val Ser
            100                 105                 110 111
```

<210> 1153
```

<211> 444
<212> Amino acid
<213> Homo sapiens


<400> 1153

```
Met Ser Leu Met Val Val Ser Met Ala Cys Val Gly Leu Phe Leu Val
1               5                   10                  15
Gln Arg Ala Gly Pro His Met Gly Gly Gln Asp Lys Pro Phe Leu Ser
                20                  25                  30
Ala Trp Pro Ser Ala Val Val Pro Arg Gly Gly His Val Thr Leu Arg
            35                  40                  45
Cys His Tyr Arg His Arg Phe Asn Asn Phe Met Leu Tyr Lys Glu Asp
        50                  55                  60
Arg Ile His Ile Pro Ile Phe His Gly Arg Ile Phe Gln Glu Ser Phe
65                  70                  75                  80
Asn Met Ser Pro Val Thr Thr Ala His Ala Gly Asn Tyr Thr Cys Arg
                85                  90                  95
Gly Ser His Pro His Ser Pro Thr Gly Trp Ser Ala Pro Ser Asn Pro
            100                 105                 110
Val Val Ile Met Val Thr Gly Asn His Arg Lys Pro Ser Leu Leu Ala
        115                 120                 125
His Pro Gly Pro Leu Val Lys Ser Gly Glu Arg Val Ile Leu Gln Cys
    130                 135                 140
Trp Ser Asp Ile Met Phe Glu His Phe Phe Leu His Lys Glu Gly Ile
145                 150                 155                 160
Ser Lys Asp Pro Ser Arg Leu Val Gly Gln Ile His Asp Gly Val Ser
                165                 170                 175
Lys Ala Asn Phe Ser Ile Gly Pro Met Met Gln Asp Leu Ala Gly Thr
            180                 185                 190
Tyr Arg Cys Tyr Gly Ser Val Thr His Ser Pro Tyr Gln Leu Ser Ala
        195                 200                 205
Pro Ser Asp Pro Leu Asp Ile Val Ile Thr Gly Leu Tyr Glu Lys Pro
    210                 215                 220
Ser Leu Ser Ala Gln Pro Gly Pro Thr Val Leu Ala Gly Glu Ser Val
225                 230                 235                 240
Thr Leu Ser Cys Ser Ser Arg Ser Ser Tyr Asp Met Tyr His Leu Ser
                245                 250                 255
Arg Glu Gly Glu Ala His Glu Arg Arg Phe Ser Ala Gly Pro Lys Val
            260                 265                 270
Asn Gly Thr Phe Gln Ala Asp Phe Pro Leu Gly Pro Ala Thr His Gly
        275                 280                 285
Gly Thr Tyr Arg Cys Phe Gly Ser Phe Arg Asp Ser Pro Tyr Glu Trp
    290                 295                 300
Ser Asn Ser Ser Asp Pro Leu Leu Val Ser Val Thr Gly Asn Pro Ser
305                 310                 315                 320
Asn Ser Trp Pro Ser Pro Thr Glu Pro Ser Ser Glu Thr Gly Asn Pro
                325                 330                 335
Arg His Leu His Val Leu Ile Gly Thr Ser Val Val Ile Ile Leu Phe
            340                 345                 350
Ile Leu Leu Leu Phe Phe Leu Leu His Arg Trp Cys Ser Asn Lys Lys
        355                 360                 365
Asn Ala Ala Val Met Asp Gln Glu Ser Ala Gly Asn Arg Thr Ala Asn
    370                 375                 380
Ser Glu Asp Ser Asp Glu Gln Asp Pro Gln Glu Val Thr Tyr Thr Gln
385                 390                 395                 400
Leu Asn His Cys Val Phe Thr Gln Arg Lys Ile Thr Arg Pro Ser Gln
                405                 410                 415
Arg Pro Lys Thr Pro Pro Thr Asp Ile Ile Val Tyr Thr Glu Leu Pro
            420                 425                 430
Asn Ala Glu Ser Arg Ser Lys Val Val Ser Cys Pro
```

```
                435              440            444
```

```
<210> 1154
<211> 522
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1154
Met Ser Leu Arg Val His Thr Leu Pro Thr Leu Leu Gly Ala Val Val
1               5                   10                  15
Arg Pro Gly Cys Arg Glu Leu Leu Cys Leu Leu Met Ile Thr Val Thr
            20                  25                  30
Val Gly Pro Gly Ala Ser Gly Val Cys Pro Thr Ala Cys Ile Cys Ala
        35                  40                  45
Thr Asp Ile Val Ser Cys Thr Asn Lys Asn Leu Ser Lys Val Pro Gly
    50                  55                  60
Asn Leu Phe Arg Leu Ile Lys Arg Leu Asp Leu Ser Tyr Asn Arg Ile
65                  70                  75                  80
Gly Leu Leu Asp Ser Glu Trp Ile Pro Val Ser Phe Ala Lys Leu Asn
            85                  90                  95
Thr Leu Ile Leu Arg His Asn Asn Ile Thr Ser Ile Ser Thr Gly Ser
            100                 105                 110
Phe Ser Thr Thr Pro Asn Leu Lys Cys Leu Asp Leu Ser Ser Asn Lys
        115                 120                 125
Leu Lys Thr Val Lys Asn Ala Val Phe Gln Glu Leu Lys Val Leu Glu
    130                 135                 140
Val Leu Leu Leu Tyr Asn Asn His Ile Ser Tyr Leu Asp Pro Ser Ala
145                 150                 155                 160
Phe Gly Gly Leu Ser Gln Leu Gln Lys Leu Tyr Leu Ser Gly Asn Phe
            165                 170                 175
Leu Thr Gln Phe Pro Met Asp Leu Tyr Val Gly Arg Phe Lys Leu Ala
        180                 185                 190
Glu Leu Met Phe Leu Asp Val Ser Tyr Asn Arg Ile Pro Ser Met Pro
        195                 200                 205
Met His His Ile Asn Leu Val Pro Gly Lys Gln Leu Arg Gly Ile Tyr
    210                 215                 220
Leu His Gly Asn Pro Phe Val Cys Asp Cys Ser Leu Val Ser Leu Leu
225                 230                 235                 240
Val Phe Trp Tyr Arg Arg His Phe Ser Ser Val Met Asp Phe Lys Asn
            245                 250                 255
Asp Tyr Thr Cys Arg Leu Trp Ser Asp Ser Arg His Ser Arg Gln Val
        260                 265                 270
Leu Leu Leu Gln Asp Ser Phe Met Asn Cys Ser Asp Ser Ile Ile Asn
        275                 280                 285
Gly Ser Phe Arg Ala Leu Gly Phe Ile His Glu Ala Gln Val Gly Glu
    290                 295                 300
Arg Leu Met Val His Cys Asp Ser Lys Thr Gly Asn Ala Asn Thr Asp
305                 310                 315                 320
Phe Ile Trp Val Gly Pro Asp Asn Arg Leu Leu Glu Pro Asp Lys Glu
            325                 330                 335
Met Glu Asn Phe Tyr Val Phe His Asn Gly Ser Leu Val Ile Glu Ser
            340                 345                 350
Pro Arg Phe Glu Asp Ala Gly Val Tyr Ser Cys Ile Ala Met Asn Lys
        355                 360                 365
Gln Arg Leu Leu Asn Glu Thr Val Asp Val Thr Ile Asn Val Ser Asn
    370                 375                 380
Phe Thr Val Ser Arg Ser His Ala His Glu Ala Phe Asn Thr Ala Phe
385                 390                 395                 400
Thr Thr Leu Ala Ala Cys Val Ala Ser Ile Val Leu Val Leu Leu Tyr
```

```
                      405                     410                     415
Leu Tyr Leu Thr Pro Cys Pro Cys Lys Cys Lys Thr Lys Arg Gln Lys
            420                     425                     430
Asn Met Leu His Gln Ser Asn Ala His Ser Ser Ile Leu Ser Pro Gly
            435                     440                     445
Pro Ala Ser Asp Ala Ser Ala Asp Glu Arg Lys Ala Gly Ala Gly Lys
        450                     455                     460
Arg Val Val Phe Leu Glu Pro Leu Lys Asp Thr Ala Ala Gly Gln Asn
465                     470                     475                     480
Gly Lys Val Arg Leu Phe Pro Ser Glu Ala Val Ile Ala Glu Gly Ile
                485                     490                     495
Leu Lys Ser Thr Arg Gly Lys Ser Asp Ser Asp Ser Val Asn Ser Val
            500                     505                     510
Phe Ser Asp Thr Pro Phe Val Ala Ser Thr
            515                     520     522
```

```
       <210> 1155
       <211> 642
       <212> Amino acid
       <213> Homo sapiens
```

```
       <400> 1155
Ala Ser Asp Phe Ile Arg Ser Leu Asp His Cys Gly Tyr Leu Ser Leu
1                   5                   10                      15
Glu Gly Val Phe Ser His Lys Phe Asp Phe Glu Leu Gln Asp Val Ser
                20                      25                      30
Ser Val Asn Glu Asp Val Leu Leu Thr Thr Gly Leu Leu Cys Lys Tyr
            35                      40                      45
Thr Ala Gln Arg Phe Lys Pro Lys Tyr Lys Phe Phe His Lys Ser Phe
        50                      55                      60
Gln Glu Tyr Thr Ala Gly Arg Arg Leu Ser Ser Leu Leu Thr Ser His
65                      70                      75                      80
Glu Pro Glu Glu Val Thr Lys Gly Asn Gly Tyr Leu Gln Lys Met Val
                85                      90                      95
Ser Ile Ser Asp Ile Thr Ser Thr Tyr Ser Ser Leu Leu Arg Tyr Thr
                100                     105                     110
Cys Gly Ser Ser Val Glu Ala Thr Arg Ala Val Met Lys His Leu Ala
        115                     120                     125
Ala Val Tyr Gln His Gly Cys Leu Leu Gly Leu Ser Ile Ala Lys Arg
    130                     135                     140
Pro Leu Trp Arg Gln Glu Ser Leu Gln Ser Val Lys Asn Thr Thr Glu
145                     150                     155                     160
Gln Glu Ile Leu Lys Ala Ile Asn Ile Asn Ser Phe Val Glu Cys Gly
                165                     170                     175
Ile His Leu Tyr Gln Glu Ser Thr Ser Lys Ser Ala Leu Ser Gln Glu
            180                     185                     190
Phe Glu Ala Phe Phe Gln Gly Lys Ser Leu Tyr Ile Asn Ser Gly Asn
        195                     200                     205
Ile Pro Asp Tyr Leu Phe Asp Phe Phe Glu His Leu Pro Asn Cys Ala
    210                     215                     220
Ser Ala Leu Asp Phe Ile Lys Leu Gly Phe Tyr Gly Gly Ala Met Ala
225                     230                     235                     240
Ser Trp Glu Lys Ala Ala Glu Asp Thr Gly Gly Ile His Met Glu Glu
                245                     250                     255
Ala Pro Glu Thr Tyr Ile Pro Ser Arg Ala Val Ser Leu Phe Phe Asn
                260                     265                     270
Trp Lys Gln Glu Phe Arg Thr Leu Glu Val Thr Leu Arg Asp Phe Ser
            275                     280                     285
Lys Leu Asn Lys Gln Asp Ile Arg Tyr Leu Gly Lys Ile Phe Ser Ser
```

```
           290                    295                    300
Ala Thr Ser Leu Arg Leu Gln Ile Lys Arg Cys Ala Gly Val Ala Gly
305                    310                    315                    320
Ser Leu Ser Leu Val Leu Ser Thr Cys Lys Asn Ile Tyr Ser Leu Met
                   325                    330                    335
Val Glu Ala Ser Pro Leu Thr Ile Glu Asp Glu Arg His Ile Thr Ser
                   340                    345                    350
Val Thr Asn Leu Lys Thr Leu Ser Ile His Asp Leu Gln Asn Gln Arg
                   355                    360                    365
Leu Pro Gly Gly Leu Thr Asp Ser Leu Gly Asn Leu Lys Asn Leu Thr
    370                    375                    380
Lys Leu Ile Met Asp Asn Ile Lys Met Asn Glu Glu Asp Ala Ile Lys
385                    390                    395                    400
Leu Ala Glu Gly Leu Lys Asn Leu Lys Lys Met Cys Leu Phe His Leu
                   405                    410                    415
Thr His Leu Ser Asp Ile Gly Glu Gly Met Asp Tyr Ile Val Lys Ser
                   420                    425                    430
Leu Ser Ser Glu Pro Cys Asp Leu Glu Glu Ile Gln Leu Val Ser Cys
                   435                    440                    445
Cys Leu Ser Ala Asn Ala Val Lys Ile Leu Ala Gln Asn Leu His Asn
    450                    455                    460
Leu Val Lys Leu Ser Ile Leu Asp Leu Ser Glu Asn Tyr Leu Glu Lys
465                    470                    475                    480
Asp Gly Asn Glu Ala Leu His Glu Leu Ile Asp Arg Met Asn Val Leu
                   485                    490                    495
Glu Gln Leu Thr Ala Leu Met Leu Pro Trp Gly Cys Asp Val Gln Gly
                   500                    505                    510
Ser Leu Ser Ser Leu Leu Lys His Leu Glu Glu Val Pro Gln Leu Val
                   515                    520                    525
Lys Leu Gly Leu Lys Asn Trp Arg Leu Thr Asp Thr Glu Ile Arg Ile
    530                    535                    540
Leu Gly Ala Phe Phe Gly Lys Asn Pro Leu Lys Asn Phe Gln Gln Leu
545                    550                    555                    560
Asn Leu Ala Gly Asn Arg Val Ser Ser Asp Gly Trp Leu Ala Phe Met
                   565                    570                    575
Gly Val Phe Glu Asn Leu Lys Gln Leu Val Phe Phe Asp Phe Ser Thr
                   580                    585                    590
Lys Glu Phe Leu Pro Asp Pro Ala Leu Val Arg Lys Leu Ser Gln Val
                   595                    600                    605
Leu Ser Lys Leu Thr Phe Leu Gln Glu Ala Arg Leu Val Gly Trp Gln
    610                    615                    620
Phe Asp Asp Asp Asp Leu Ser Val Ile Thr Gly Ala Phe Lys Leu Val
625                    630                    635                    640
Thr Ala
642
```

```
<210> 1156
<211> 125
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(125)
<223> X = any amino acid or stop code
```

```
<400> 1156
Ala Ser Asp Arg Lys Val Ala Met Thr Cys Asp Cys Phe Trp Phe Arg
1                   5                    10                    15
```

```
Thr Met Leu Asp Gln His Ala Ser Cys Met Glu Val Gly Thr Glu Arg
        20                  25                  30
Glu Arg Gln Ala Gly Gly Leu Val Met Phe Asp Pro Ser Gly Phe Pro
        35                  40                  45
Thr Gly Glu Lys Val Leu Gln Asp Asp Glu Phe Thr Cys Asp Leu Phe
    50                  55                  60
Arg Phe Leu Gln Leu Leu Cys Glu Gly His Asn Ser Gly Leu Xaa Val
65                  70                  75                  80
Pro Gly Thr Ser Asp Asp Thr Lys Ala Xaa Ile Met Phe Ser Ser Gln
                85                  90                  95
Xaa Xaa Gln Glu Pro Val Ser Ser Asn Tyr Ala Ser Phe Xaa Arg Gln
        100                 105                 110
Gln Ile Ile Leu Glu His Gly Ser Ala Leu Gly Ser Gly
        115                 120                 125
```

```
<210> 1157
<211> 91
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(91)
<223> X = any amino acid or stop code
```

```
<400> 1157
Glu Ile Thr His Ile Val Gly Glu Thr Ala Ala Phe Leu Cys Pro Arg
1               5                   10                  15
Leu Arg Leu Arg Arg Gly Gly Lys Asp Gly Ser Pro Lys Pro Gly Phe
        20                  25                  30
Leu Ala Ser Val Ile Pro Val Asp Arg Arg Pro Gly Glu Xaa Asp Ile
        35                  40                  45
Thr His Ile Val Gly Glu Thr Ala Ala Phe Leu Cys Pro Arg Leu Arg
    50                  55                  60
Leu Arg Arg Gly Gly Lys Asp Gly Ser Pro Lys Pro Gly Phe Leu Ala
65                  70                  75                  80
Ser Val Ile Pro Val Asp Arg Arg Pro Gly Glu
                85                  90  91
```

```
<210> 1158
<211> 254
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(254)
<223> X = any amino acid or stop code
```

```
<400> 1158
Ser Lys Phe Ile Phe Tyr Val Asp Ser Gln Ser Met Ile Phe Phe Phe
1               5                   10                  15
Gln Thr Pro Thr Arg His Lys Val Leu Ile Met Glu Phe Cys Pro Cys
        20                  25                  30
```

```
Gly Ser Leu Tyr Thr Val Leu Glu Glu Pro Ser Asn Ala Tyr Gly Leu
        35                  40                  45
Pro Glu Ser Glu Phe Leu Ile Val Leu Arg Asp Val Val Gly Gly Met
    50                  55                  60
Asn His Leu Arg Glu Asn Gly Ile Val His Arg Asp Ile Lys Pro Gly
65                  70                  75                  80
Asn Ile Met Arg Val Ile Gly Glu Asp Gly Gln Ser Val Tyr Lys Leu
                85                  90                  95
Thr Asp Phe Gly Ala Ala Arg Glu Leu Glu Asp Asp Glu Gln Phe Val
            100                 105                 110
Ser Leu Tyr Gly Thr Glu Glu Tyr Leu His Pro Asp Met Tyr Glu Arg
        115                 120                 125
Ala Val Leu Arg Lys Asp His Gln Lys Lys Tyr Gly Ala Thr Val Asp
    130                 135                 140
Leu Trp Ser Ile Gly Val Thr Phe Tyr Gln Gly Lys Pro Thr Gly Ser
145                 150                 155                 160
Leu Ala Ile Xaa His Pro Phe Glu Gly Ala Ser Val Arg Asn Lys Ala
            165                 170                 175
Ser Asp Gly Ile Lys Ile Ile Thr Gly Lys Gly Leu Leu Gly Ala Ile
        180                 185                 190
Ser Gly Val Gln Lys Ser Lys Lys Asn Gly Pro Ile Asp Trp Glu Trp
    195                 200                 205
Glu Asp Met Pro Val Ser Cys Ser Pro Ser Ser Gly Val Leu Arg Val
    210                 215                 220
Pro Asn Leu Pro Pro Val Leu Ala Asn Ile Leu Glu Ser Arg Ser Arg
225                 230                 235                 240
Lys Lys Cys Trp Gly Phe Xaa Pro Ser Phe Leu Gln Glu Asn
                245                 250                 254
```

```
<210> 1159
<211> 162
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1159
Gly Ser Thr Ile Ser Cys Glu Arg Ser Leu Arg Ser Leu Trp Thr Ala
1               5                   10                  15
His Trp Ala Leu Pro Glu Met Asp Ser Arg Ile Pro Tyr Asp Asp Tyr
        20                  25                  30
Pro Val Val Phe Leu Pro Ala Tyr Glu Asn Pro Pro Ala Trp Ile Pro
        35                  40                  45
Pro His Glu Arg Val His His Pro Asp Tyr Asn Asn Glu Leu Thr Gln
    50                  55                  60
Phe Leu Pro Arg Thr Ile Thr Leu Lys Lys Pro Pro Gly Ala Gln Leu
65                  70                  75                  80
Gly Phe Asn Ile Arg Gly Gly Lys Ala Ser Gln Leu Gly Ile Phe Ile
                85                  90                  95
Ser Lys Val Ile Pro Asp Ser Asp Ala His Arg Ala Gly Leu Gln Glu
            100                 105                 110
Gly Asp Gln Val Leu Ala Val Asn Asp Val Asp Phe Gln Asp Ile Glu
        115                 120                 125
His Ser Lys Ala Val Glu Ile Leu Lys Thr Ala Arg Glu Ile Ser Met
    130                 135                 140
Arg Val Arg Phe Phe Pro Tyr Asn Tyr His Arg Gln Lys Glu Arg Thr
145                 150                 155                 160
Val His
    162
```

<210> 1160
<211> 295
<212> Amino acid
<213> Homo sapiens

<400> 1160

```
His Glu Gln Val Ser Ala Leu His Arg Arg Ile Lys Ala Ile Val Glu
1               5                   10                  15
Val Ala Ala Met Cys Gly Val Asn Ile Ile Cys Phe Gln Glu Ala Trp
                20                  25                  30
Thr Met Pro Phe Ala Phe Cys Thr Arg Glu Lys Leu Pro Trp Thr Glu
        35                  40                  45
Phe Ala Glu Ser Ala Glu Asp Gly Pro Thr Thr Arg Phe Cys Gln Lys
    50                  55                  60
Leu Ala Lys Asn His Asp Met Val Val Val Ser Pro Ile Leu Glu Arg
65                  70                  75                  80
Asp Ser Glu His Gly Asp Val Leu Trp Asn Thr Ala Val Val Ile Ser
                85                  90                  95
Asn Ser Gly Ala Val Leu Gly Lys Thr Arg Lys Asn His Ile Pro Arg
            100                 105                 110
Val Gly Asp Phe Asn Glu Ser Thr Tyr Tyr Met Glu Gly Asn Leu Gly
            115                 120                 125
His Pro Val Phe Gln Thr Gln Phe Gly Arg Ile Ala Val Asn Ile Cys
        130                 135                 140
Tyr Gly Arg His His Pro Leu Asn Trp Leu Met Tyr Ser Ile Asn Gly
145                 150                 155                 160
Ala Glu Ile Ile Phe Asn Pro Ser Ala Thr Ile Gly Ala Leu Ser Glu
                165                 170                 175
Ser Leu Trp Pro Ile Glu Ala Arg Asn Ala Ala Ile Ala Asn His Cys
            180                 185                 190
Phe Thr Cys Ala Ile Asn Arg Val Gly Thr Glu His Phe Pro Asn Glu
        195                 200                 205
Phe Thr Ser Gly Asp Gly Lys Lys Ala His Gln Asp Phe Gly Tyr Phe
    210                 215                 220
Tyr Gly Ser Ser Tyr Val Ala Ala Pro Asp Ser Ser Arg Thr Pro Gly
225                 230                 235                 240
Leu Ser Arg Ser Arg Asp Gly Leu Leu Val Ala Lys Leu Asp Leu Asn
                245                 250                 255
Leu Cys Gln Gln Val Asn Asp Val Trp Asn Phe Lys Met Thr Gly Arg
            260                 265                 270
Tyr Glu Met Tyr Ala Arg Glu Leu Ala Glu Ala Val Lys Ser Asn Tyr
        275                 280                 285
Ser Pro Thr Ile Val Lys Glu
        290                 295
```


<210> 1161
<211> 1621
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1621)
<223> X = any amino acid or stop code

```
<400> 1161
Met Ala Lys Ser Gly Gly Cys Gly Ala Gly Ala Gly Val Gly Gly Gly
1               5                   10                  15
Asn Gly Ala Leu Thr Trp Val Asn Asn Ala Ala Lys Lys Glu Glu Ser
            20                  25                  30
Glu Thr Ala Asn Lys Asn Asp Ser Ser Lys Lys Leu Ser Val Glu Arg
            35                  40                  45
Val Tyr Gln Lys Lys Thr Gln Leu Glu His Ile Leu Leu Arg Pro Asp
    50                  55                  60
Thr Tyr Ile Gly Ser Val Glu Pro Leu Thr Gln Phe Met Trp Val Tyr
65                  70                  75                  80
Asp Glu Asp Val Gly Met Asn Cys Arg Glu Val Thr Phe Val Pro Gly
                85                  90                  95
Leu Tyr Lys Ile Phe Asp Glu Ile Leu Val Asn Ala Ala Asp Asn Lys
            100                 105                 110
Gln Arg Asp Lys Asn Met Thr Cys Ile Lys Val Ser Ile Asp Pro Glu
            115                 120                 125
Ser Asn Ile Ile Ser Ile Trp Asn Asn Gly Lys Gly Ile Pro Val Val
    130                 135                 140
Glu His Lys Val Glu Lys Val Tyr Val Pro Ala Leu Ile Phe Gly Gln
145                 150                 155                 160
Leu Leu Thr Ser Ser Asn Tyr Asp Asp Asp Glu Lys Lys Val Thr Gly
                165                 170                 175
Gly Arg Asn Gly Tyr Gly Ala Lys Leu Cys Asn Ile Phe Ser Thr Lys
            180                 185                 190
Phe Thr Val Glu Thr Ala Cys Lys Glu Tyr Lys His Ser Phe Lys Gln
            195                 200                 205
Thr Trp Met Asn Asn Met Met Lys Thr Ser Glu Ala Lys Ile Lys His
    210                 215                 220
Phe Asp Gly Glu Asp Tyr Thr Cys Ile Thr Phe Gln Pro Asp Leu Ser
225                 230                 235                 240
Lys Phe Lys Met Glu Lys Leu Asp Lys Asp Ile Val Ala Leu Met Thr
                245                 250                 255
Arg Arg Ala Tyr Asp Leu Ala Gly Ser Cys Arg Gly Val Lys Val Met
            260                 265                 270
Phe Asn Gly Lys Lys Leu Pro Val Asn Gly Phe Arg Ser Tyr Val Asp
            275                 280                 285
Leu Tyr Val Lys Asp Lys Leu Asp Glu Thr Gly Val Ala Leu Lys Val
    290                 295                 300
Ile His Glu Leu Ala Asn Glu Arg Trp Asp Val Cys Leu Thr Leu Ser
305                 310                 315                 320
Glu Lys Gly Phe Gln Gln Ile Ser Phe Val Asn Ser Ile Ala Thr Thr
            325                 330                 335
Lys Gly Gly Arg His Val Asp Tyr Val Val Asp Gln Val Val Gly Lys
            340                 345                 350
Leu Ile Glu Val Val Lys Lys Lys Asn Lys Ala Gly Val Ser Val Lys
            355                 360                 365
Pro Phe Gln Val Lys Asn His Ile Trp Val Phe Ile Asn Cys Leu Ile
370                 375                 380
Glu Asn Pro Thr Phe Asp Ser Gln Thr Lys Glu Asn Met Thr Leu Gln
385                 390                 395                 400
Pro Lys Ser Phe Gly Ser Lys Cys Gln Leu Ser Glu Lys Phe Phe Lys
            405                 410                 415
Ala Ala Ser Asn Cys Gly Ile Val Glu Ser Ile Leu Asn Trp Val Lys
            420                 425                 430
Phe Lys Ala Gln Thr Gln Leu Asn Lys Lys Cys Ser Ser Val Lys Tyr
            435                 440                 445
Ser Lys Ile Lys Gly Ile Pro Lys Leu Asp Asp Ala Asn Asp Ala Gly
    450                 455                 460
Gly Lys His Ser Leu Glu Cys Thr Leu Ile Leu Thr Glu Gly Asp Ser
465                 470                 475                 480
Ala Lys Ser Leu Ala Val Ser Gly Leu Gly Val Ile Gly Arg Asp Arg
                485                 490                 495
Tyr Gly Val Phe Pro Leu Arg Gly Lys Ile Leu Asn Val Arg Glu Ala
```

689

```
                    500                      505                       510
Ser His Lys Gln Ile Met Glu Asn Ala Glu Ile Asn Asn Ile Ile Lys
        515                      520                       525
Ile Val Gly Leu Gln Tyr Lys Lys Ser Tyr Asp Asp Ala Gln Ser Leu
        530                      535                       540
Lys Thr Leu Arg Tyr Gly Lys Ile Met Ile Met Thr Asp Gln Asp Gln
545                      550                       555                       560
Asp Gly Ser His Ile Lys Gly Leu Leu Ile Asn Phe Ile His His Asn
                565                      570                       575
Trp Pro Ser Leu Leu Lys His Gly Phe Leu Glu Glu Phe Ile Thr Pro
            580                      585                       590
Ile Val Lys Ala Ser Lys Asn Lys Gln Glu Leu Ser Phe Tyr Ser Ile
        595                      600                       605
Pro Glu Phe Asp Glu Trp Lys Lys His Ile Glu Asn Gln Lys Ala Trp
        610                      615                       620
Lys Ile Lys Tyr Tyr Lys Gly Leu Gly Thr Ser Thr Ala Lys Glu Ala
625                      630                       635            .          640
Lys Glu Tyr Phe Ala Asp Met Glu Arg His Arg Ile Leu Phe Arg Tyr
                645                      650                       655
Ala Gly Pro Glu Asp Asp Ala Ala Ile Thr Leu Ala Phe Ser Lys Lys
            660                      665                       670
Lys Ile Asp Asp Arg Lys Glu Trp Leu Thr Asn Phe Met Glu Asp Arg
        675                      680                       685
Arg Gln Arg Arg Leu His Gly Leu Pro Glu Gln Phe Leu Tyr Gly Thr
    690                      695                       700
Ala Thr Lys His Leu Thr Tyr Asn Asp Phe Ile Asn Lys Glu Leu Ile
705                      710                       715                       720
Leu Phe Ser Asn Ser Asp Asn Glu Arg Ser Ile Pro Ser Leu Val Asp
                725.                     730                       735
Gly Phe Lys Pro Gly Gln Arg Lys Val Leu Phe Thr Cys Phe Lys Arg
            740                      745                       750
Asn Asp Lys Arg Glu Val Lys Val Ala Gln Leu Ala Gly Ser Val Ala
        755                      760                       765
Glu Met Ser Ala Tyr His His Gly Glu Gln Ala Leu Met Met Thr Ile
770                      775                       780
Val Asn Leu Ala Gln Asn Phe Val Gly Ser Asn Asn Ile Asn Leu Leu
785                      790                       795                       800
Gln Pro Ile Gly Gln Phe Gly Thr Arg Leu His Gly Gly Lys Asp Ala
            805                      810                       815
Ala Ser Pro Arg Tyr Ile Phe Thr Met Leu Ser Thr Leu Ala Arg Leu
        820                      825                       830
Leu Phe Pro Ala Val Asp Asp Asn Leu Leu Lys Phe Leu Tyr Asp Asp
        835                      840                       845
Asn Gln Arg Val Glu Pro Glu Trp Tyr Ile Pro Ile Ile Pro Met Val
    850                      855                       860
Leu Ile Asn Gly Ala Glu Gly Ile Gly Thr Gly Trp Ala Cys Lys Leu
865                      870                       875                       880
Pro Asn Tyr Asp Ala Arg Glu Ile Val Asn Asn Val Arg Arg Met Leu
            885                      890                       895
Asp Gly Leu Asp Pro His Pro Met Leu Pro Asn Tyr Lys Asn Phe Lys
    900                      905                       910
Gly Thr Ile Gln Glu Leu Gly Gln Asn Gln Tyr Ala Val Ser Gly Glu
        915    '                 920                       925
Ile Phe Val Val Asp Arg Asn Thr Val Glu Ile Thr Glu Leu Pro Val
    930                      935                       940
Arg Thr Trp Thr Gln Val Tyr Lys Glu Gln Val Leu Glu Pro Met Leu
945                      950                       955                       960
Asn Gly Thr Asp Lys Thr Pro Ala Leu Ile Ser Asp Tyr Lys Glu Tyr
                965                      970                       975
His Thr Asp Thr Thr Val Lys Phe Val Val Lys Met Thr Glu Glu Lys
            980                      985                       990
Leu Ala Gln Ala Glu Ala Ala Gly Leu His Lys Val Phe Lys Leu Gln
        995                      1000                      1005
Thr Thr Leu Thr Cys Asn Ser Met Val Leu Phe Asp His Met Gly Cys
```

690

```
               1010                 1015                    1020
        Leu Lys Lys Tyr Glu Thr Val Gln Asp Ile Leu Lys Glu Phe Phe Asp
    1025                    1030                 1035                    1040
        Leu Arg Leu Ser Tyr Tyr Gly Leu Arg Lys Glu Trp Leu Val Gly Met
                   1045                 1050                    1055
        Leu Gly Ala Glu Phe Thr Lys Leu Asn Asn Gln Ala Arg Phe Ile Leu
                   1060                 1065                    1070
        Glu Lys Ile Gln Gly Lys Ile Thr Ile Xaa Asn Arg Ser Lys Lys Asp
               1075                    1080                 1085
        Leu Ile Gln Met Leu Val Gln Arg Gly Tyr Glu Ser Asp Pro Val Lys
         - 1090                 1095                    1100
        Ala Trp Lys Glu Ala Gln Glu Lys Ala Ala Glu Glu Asp Glu Thr Gln
    1105                    1110                 1115                    1120
        Asn Gln His Asp Asp Ser Ser Ser Asp Ser Gly Thr Pro Ser Gly Pro
                   1125                 1130                    1135
        Asp Phe Asn Tyr Ile Leu Asn Met Ser Leu Trp Ser Leu Thr Lys Glu
                   1140                 1145                    1150
        Lys Val Glu Glu Leu Ile Lys Gln Arg Asp Ala Lys Gly Arg Glu Val
                   1155                 1160                    1165
        Asn Asp Leu Lys Arg Lys Ser Pro Ser Asp Leu Trp Lys Glu Asp Leu
               1170                 1175                    1180
        Ala Ala Phe Val Glu Glu Leu Asp Lys Val Glu Ser Gln Glu Arg Glu
    1185                    1190                 1195                    1200
        Asp Val Leu Ala Gly Met Ser Gly Lys Ala Ile Lys Gly Lys Val Gly
                   1205                 1210                    1215
        Lys Pro Lys Val Lys Lys Leu Gln Leu Glu Glu Thr Met Pro Ser Pro
                   1220                 1225                    1230
        Tyr Gly Arg Arg Ile Ile Pro Glu Ile Thr Ala Met Lys Ala Asp Ala
             1235                 1240                    1245
        Ser Lys Lys Leu Leu Lys Lys Lys Gly Asp Leu Asp Thr Ala Ala
             1250                  1255                  1260
        Val Lys Val Glu Phe Asp Glu Glu Phe Ser Gly Ala Pro Val Glu Gly
    1265                    1270                 1275                    1280
        Ala Gly Glu Glu Ala Leu Thr Pro Ser Val Pro Ile Asn Lys Gly Pro
                   1285                 1290                    1295
        Lys Pro Lys Arg Glu Lys Lys Glu Pro Gly Thr Arg Val Arg Lys Thr
               1300                 1305                    1310
        Pro Thr Ser Ser Gly Lys Pro Ser Ala Lys Lys Val Lys Lys Arg Asn
             1315                 1320                    1325
        Pro Trp Ser Asp Asp Glu Ser Lys Ser Glu Ser Asp Leu Glu Glu Thr
          . 1330                 1335                    1340
        Glu Pro Val Val Ile Pro Arg Asp Ser Leu Leu Arg Arg Ala Ala Ala
    1345                    1350                 1355                    1360
        Glu Arg Pro Lys Tyr Thr Phe Asp Phe Ser Glu Glu Glu Asp Asp Asp
                   1365                 1370                    1375
        Ala Asp Asp Asp Asp Asp Asn Asn Asp Leu Glu Glu Leu Lys Val
               1380                 1385                    1390
        Lys Ala Ser Pro Ile Thr Asn Asp Gly Glu Asp Glu Phe Val Pro Ser
               1395                 1400                    1405
        Asp Gly Leu Asp Lys Asp Glu Tyr Thr Phe Ser Pro Gly Lys Ser Lys
          1410                 1415                    1420
        Ala Thr Pro Glu Lys Ser Leu His Asp Lys Lys Ser Gln Asp Phe Gly
    1425                    1430                 1435                    1440
        Asn Leu Phe Ser Phe Pro Ser Tyr Ser Gln Lys Ser Glu Asp Asp Ser
                   1445                 1450                    1455
        Ala Lys Phe Asp Ser Asn Glu Glu Asp Ser Ala Ser Val Phe Ser Pro
               1460                 1465                    1470
        Ser Phe Gly Leu Lys Gln Thr Asp Lys Val Pro Ser Lys Thr Val Ala
             1475                 1480                    1485
        Ala Lys Lys Gly Lys Pro Ser Ser Asp Thr Val Pro Lys Pro Lys Arg
             1490                 1495                    1500
        Ala Pro Lys Gln Lys Lys Val Val Glu Ala Val Asn Ser Asp Ser Asp
    1505                    1510                 1515                    1520
        Ser Glu Phe Gly Ile Pro Lys Lys Thr Thr Thr Pro Lys Gly Lys Gly
```

691

```
            1525                1530                1535
Arg Gly Ala Lys Lys Arg Lys Ala Ser Gly Ser Glu Asn Glu Gly Asp
          1540                1545                1550
Tyr Asn Pro Gly Arg Lys Thr Ser Lys Thr Thr Ser Lys Lys Pro Lys
        1555                1560                1565
Lys Thr Ser Phe Asp Gln Asp Ser Asp Val Asp Ile Phe Pro Ser Asp
      1570              1575                1580
Phe Pro Thr Glu Pro Pro Ser Leu Pro Arg Thr Gly Arg Ala Arg Lys
1585                1590                1595                1600
Glu Val Lys Tyr Phe Ala Glu Ser Asp Glu Glu Asp Asp Val Asp
              1605                1610                1615
Phe Ala Met Phe Asn
            16201621
```

```
     <210> 1162
     <211> 73
     <212>Amino acid
     <213> Homo sapiens

     <220>
     <221> misc_feature
     <222> (1)...(73)
     <223> X = any amino acid or stop code
```

```
     <400> 1162
Lys Gly Cys Leu Ala Ala Ser Phe Asn Cys Ile Phe Leu Tyr Thr Gly
 1               5                10                15
Glu Leu Tyr Pro Thr Met Ile Arg Xaa Val Glu Ala Xaa Trp Glu Asn
            20                25                30
Asp Ser Leu Phe Leu Gly Lys Asp Ile Leu Leu Cys Thr Gly Gln Thr
          35                40                45
Pro Glu Leu Asn Gln Val His Pro Ser Pro Lys Ala Pro Pro Asn Thr
        50                55                60
His His Cys Lys Ala His Ser Ser His
65                70                73
```

```
     <210> 1163
     <211> 336
     <212>Amino acid
     <213> Homo sapiens
```

```
     <400> 1163
Glu Asn Ser Phe Glu Cys Lys Asp Cys Gly Lys Ala Phe Ser Arg Gly
 1               5                10                15
Tyr Gln Leu Ser His His Gln Lys Ile His Thr Gly Glu Lys Pro Tyr
            20                25                30
Glu Cys Lys Glu Cys Lys Lys Ala Phe Arg Trp Gly Asn Gln Leu Thr
          35                40                45
Gln His Gln Lys Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Lys Asp
        50                55                60
Cys Gly Lys Ala Phe Arg Trp Gly Ser Ser Leu Val Ile His Lys Arg
65                70                75                80
Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Lys Asp Cys Gly Lys Ala
              85                90                95
```

692

```
Phe Arg Arg Gly Asp Glu Leu Thr Gln His Gln Arg Phe His Thr Gly
        100                     105                 110
Glu Lys Asp Tyr Glu Cys Lys Asp Cys Gly Lys Thr Phe Ser Arg Val
        115                     120                 125
Tyr Lys Leu Ile Gln His Lys Arg Ile His Ser Gly Glu Lys Pro Tyr
    130                     135                 140
Glu Cys Lys Asp Cys Gly Lys Ala Phe Ile Cys Gly Ser Ser Leu Ile
145                     150                 155                 160
Gln His Lys Arg Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Gln Glu
                165                 170                 175
Cys Gly Lys Ala Phe Thr Arg Val Asn Tyr Leu Thr Gln His Gln Lys
            180                 185                 190
Ile His Thr Gly Glu Lys Pro His Glu Cys Lys Glu Cys Gly Lys Ala
        195                 200                 205
Phe Arg Trp Gly Ser Ser Leu Val Lys His Glu Arg Ile His Thr Gly
    210                 215                 220
Glu Lys Pro Tyr Lys Cys Thr Glu Cys Gly Lys Ala Phe Asn Cys Gly
225                 230                 235                 240
Tyr His Leu Thr Gln His Glu Arg Ile His Thr Gly Glu Thr Pro Tyr
                245                 250                 255
Lys Cys Lys Glu Cys Gly Lys Ala Phe Ile Tyr Gly Ser Ser Leu Val
            260                 265                 270
Lys His Glu Arg Ile His Thr Gly Val Lys Pro Tyr Gly Cys Thr Glu
        275                 280                 285
Cys Gly Lys Ser Phe Ser His Gly His Gln Leu Thr Gln His Gln Lys
        290                 295                 300
Thr His Ser Gly Ala Lys Ser Tyr Glu Cys Lys Glu Cys Gly Lys Ala
305                 310                 315                 320
Cys Asn His Leu Asn His Leu Arg Glu His Gln Arg Ile His Asn Ser
                325                 330                 335 336
```

```
<210> 1164
<211> 118
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(118)
<223> X = any amino acid or stop code
```

```
<400> 1164
His Gln Tyr Leu Asp Asp Leu Tyr Pro Leu His Val Met Thr Ile Leu
  1               5                   10                  15
Leu Lys Ser His Phe Phe Thr Met Leu Lys Arg Pro Val Gly Ser Ser
            20                  25                  30
Ser Phe Ala Ser Leu Pro Phe Tyr His Gln Ser Ile Leu Leu Arg Lys
        35                  40                  45
Asn Gln Met Lys Arg Lys Lys Thr Gln Gln Asp Leu Thr His Ile Asn
    50                  55                  60
Trp Thr Leu Gln Ala Val Ser Ile Gln Thr Cys Ile Trp Leu Gln Lys
65                  70                  75                  80
Lys Pro Ser Ser Tyr Phe His Gln Leu Pro Asn Gln Val Leu Xaa Pro
                85                  90                  95
Glu Asn Ser Gly Pro Glu Ser Cys Leu Tyr Asp Leu Ala Ala Val Val
            100                 105                 110
Val His His Gly Ser Gly
```

693

115   118

<210> 1165
<211> 146
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(146)
<223> X = any amino acid or stop code

<400> 1165
```
Xaa Leu Asp Pro Asp Thr Leu Pro Ala Val Ala Thr Leu Leu Met Asp
1               5                   10                  15
Val Met Phe Tyr Ser Asn Gly Val Lys Asp Pro Met Ala Thr Gly Asp
            20                  25                  30
Asp Cys Gly His Ile Arg Phe Phe Ser Phe Ser Leu Ile Glu Gly Tyr
        35                  40                  45
Ile Ser Leu Val Met Asp Val Gln Thr Gln Gln Arg Phe Pro Ser Asn
    50                  55                  60
Leu Leu Phe Thr Ser Ala Ser Gly Glu Leu Trp Lys Met Val Arg Ile
65                  70                  75                  80
Gly Gly Gln Pro Leu Gly Phe Gly Pro Val Trp Glu Ser Gly Pro Thr
                85                  90                  95
Gly Pro Thr Ser Pro Leu Ile Leu Pro Val Thr Pro Ser Ser Ser His
            100                 105                 110
Arg Gln Ala Ala Ser Gln Val Thr Thr Thr Lys Gln Gly Gln Trp Leu
        115                 120                 125
Cys Leu Lys Arg Pro Ser Ala Arg Ser Pro Asp His Thr Ala Cys Leu
    130                 135                 140
Gly *
145
```

<210> 1166
<211> 84
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(84)
<223> X = any amino acid or stop code

<400> 1166
```
Glu Ala Pro Leu Thr Ser Val Cys Phe Ser Leu Glu Arg Arg Phe Gly
1               5                   10                  15
Ser Ser Ser Asn Thr Thr Ser Phe Gly Thr Leu Ala Ser Gln Asn Ala
            20                  25                  30
Pro Thr Phe Gly Ser Leu Ser Gln Gln Thr Ser Gly Phe Gly Thr Gln
        35                  40                  45
Ser Ser Gly Phe Ser Gly Phe Gly Ser Gly Thr Gly Gly Phe Ser Phe
    50                  55                  60
Gly Ser Asn Asn Ser Xaa Val Ser Pro Phe Leu Ser Leu Thr Leu Ile
```

694

```
      65                    70                75                80
Lys Ser Ile Lys
              84
```

```
      <210> 1167
      <211> 112
      <212>Amino acid
      <213> Homo sapiens

      <220>
      <221> misc_feature
      <222> (1)...(112)
      <223> X = any amino acid or stop code
```

```
      <400> 1167
Glu Glu Pro Gln Gly Ser Pro Ile Trp Val Trp Leu Ala Gly Ser Leu
 1               5                   10                  15
Thr Ser Val Ser Cys Phe Leu Pro Phe Gln Arg Met Arg Ile Lys Pro
              20                  25                  30
His Gln Gly Gln Tyr Ile Gly Glu Met Ser Phe Leu Gln His His Lys
              35                  40                  45
Gly Glu Cys Arg Pro Gln Lys Asp Xaa Ala Arg Gln Glu Asn Pro Cys
      50                  55                  60
Gly Pro Cys Ser Glu Arg Arg Lys His Leu Leu Gly Gln Asp Pro Lys
 65                  70                  75                  80
Thr Cys Lys Cys Ser Cys Lys Asn Thr Asp Ser Arg Cys Lys Ala Arg
                  85                  90                  95
Pro Leu Glu Leu Asn Glu Arg Thr Cys Arg Cys Asp Lys Pro Arg Arg
              100                 105                 110     112
```

```
      <210> 1168
      <211> 319
      <212>Amino acid
      <213> Homo sapiens

      <220>
      <221> misc_feature
      <222> (1)...(319)
      <223> X = any amino acid or stop code
```

```
      <400> 1168
Thr Leu Trp Ala Gly Pro Gly Leu Cys Pro Gln Ser His Ser Ser Ser
 1               5                   10                  15
Ser Val Pro Ala Pro Trp Glu Pro His Val Glu Arg Ala Leu Arg Thr
              20                  25                  30
Asp Arg Asn Gln Gly Gln Arg Pro Leu Leu Ser Ala Ser Trp Ala Pro
              35                  40                  45
Ala Pro Ala Arg Pro Leu Phe Leu Thr Ser Pro Val Leu Leu Pro Lys
      50                  55                  60
Ser Arg Ala Ile Pro Ala Ala Arg Asp Pro Ser Xaa Ala Gly Ile Phe
 65                  70                  75                  80
Cys Leu Leu Glu Met Ala Gly Gly Gln Ala Ser Val Val Ile Ile Gly
```

```
                              85                    90                    95
Ser Ala Gly Val Leu Gly Cys Arg Trp Gly Ser Ser Gly Lys Ser His
                 100                   105                   110
Ser Leu Ser Pro Ser Arg Lys Gly Asn Leu His Leu Leu Ser Gln Glu
        115                   120                   125
Pro Gln Thr Thr Val Val His Asn Ala Thr Asp Gly Ile Lys Gly Ser
        130                   135                   140
Thr Glu Ser Cys Asn Thr Thr Glu Asp Glu Asp Leu Lys Val Arg
145                   150                   155                   160
Lys Gln Glu Ile Ile Lys Ile Thr Glu Gln Leu Ile Glu Ala Ile Asn
                 165                   170                   175
Asn Gly Asp Phe Glu Ala Tyr Thr Lys Ile Cys Asp Pro Gly Leu Thr
             180                   185                   190
Ser Phe Glu Pro Glu Ala Leu Gly Asn Leu Val Glu Gly Met Asp Phe
        195                   200                   205
His Lys Phe Tyr Phe Glu Asn Arg Glu Trp Val Arg Ala Ala Asp Ile
    210                   215                   220
Leu Leu Pro Ala Pro Leu Pro Leu Cys Leu Cys Leu Leu Leu Thr Phe
225                   230                   235                   240
Ser Ser Gln Leu Pro Thr Phe Pro Leu Phe Asp Leu Arg Ala Ala Leu
             245                   250                   255
Leu Leu Cys Met Leu Val Pro Leu Cys Pro Asp Gly Cys Arg Gln Ala
        260                   265                   270
Pro Leu Lys Ala Leu Leu Leu Ser Ser Lys Cys His Ser Phe Cys Ser
        275                   280                   285
Cys Phe Val Ala Val Pro Val Thr Thr Ile Lys Leu Thr Tyr Phe Leu
        290                   295                   300
Pro Gly Ala Val Ala Tyr Ala Cys Asn Pro Asn Thr Leu Gly Gly
305                   310                   315                   319
```

```
        <210> 1169
        <211> 96
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1169
Glu Arg Ala Gly Ala Gly Gly Ala Ala Ala Cys Arg Ala Gly Thr Arg
 1               5                   10                    15
Ser Gly Ala Thr Ser Arg Thr Pro Trp Pro Leu His Arg Gln Leu Ser
            20                    25                    30
Met Met Leu Met Leu Ala Gln Ser Asn Pro Gln Leu Phe Ala Leu Met
        35                    40                    45
Gly Thr Arg Ala Gly Ile Ala Arg Glu Leu Glu Arg Val Glu Gln Gln
    50                    55                    60
Ser Arg Leu Glu Gln Leu Ser Ala Ala Glu Leu Gln Ser Arg Asn Gln
65                    70                    75                    80
Gly His Trp Ala Asp Trp Leu Gln Ala Tyr Arg Ala Arg Leu Gly Gln
                85                    90                    95  96
```

```
        <210> 1170
        <211> 145
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
```

```
    <222> (1)...(145)
    <223> X = any amino acid or stop code




    <400> 1170
Asn Gly Thr Leu Phe Ile Met Val Met His Ile Lys Asp Leu Val Ser
1                   5                   10                  15
Asp Tyr Lys Glu Xaa Trp Leu Xaa Arg Lys Pro Leu Pro Trp Xaa Glu
            20                  25                  30
Ala Leu Leu Leu Arg Asp Cys Phe Phe Phe Xaa Val Thr Glu Asn Gly
        35                  40                  45
Ala Asp Pro Asn Pro Tyr Val Lys Thr Tyr Leu Leu Pro Asp Asn His
    50                  55                  60
Lys Thr Ser Lys Arg Lys Thr Lys Ile Ser Arg Lys Thr Arg Asn Pro
65                  70                  75                  80
Thr Phe Asn Glu Met Leu Val Tyr Ser Gly Tyr Ser Lys Glu Thr Leu
                85                  90                  95
Arg Gln Arg Glu Leu Gln Leu Ser Val Leu Ser Ala Glu Ser Leu Arg
            100                 105                 110
Glu Asn Phe Phe Leu Gly Gly Val Thr Leu Pro Leu Lys Asp Phe Asn
        115                 120                 125
Leu Ser Lys Glu Thr Val Lys Trp Tyr Gln Leu Thr Ala Ala Thr Tyr
    130                 135                 140
Leu
145


    <210> 1171
    <211> 464
    <212>Amino acid
    <213> Homo sapiens




    <400> 1171
Leu His Arg Ile Met Gln Leu Ala Val Val Val Ser Gln Val Leu Glu
1                   5                   10                  15
Asn Gly Ser Ser Val Leu Val Cys Leu Glu Glu Gly Trp Asp Ile Thr
            20                  25                  30
Ala Gln Val Thr Ser Leu Val Gln Leu Leu Ser Asp Pro Phe Tyr Arg
        35                  40                  45
Thr Leu Glu Gly Phe Gln Met Leu Val Glu Lys Glu Trp Leu Ser Phe
    50                  55                  60
Gly His Lys Phe Ser Gln Arg Ser Ser Leu Thr Leu Asn Cys Gln Gly
65                  70                  75                  80
Ser Gly Phe Ala Pro Val Phe Leu Gln Phe Leu Asp Cys Val His Gln
            85                  90                  95
Val His Asn Gln Tyr Pro Thr Glu Phe Glu Phe Asn Leu Tyr Tyr Leu
            100                 105                 110
Lys Phe Leu Ala Phe His Tyr Val Ser Asn Arg Phe Lys Thr Phe Leu
        115                 120                 125
Leu Asp Ser Asp Tyr Glu Arg Leu Glu His Gly Thr Leu Phe Asp Asp
    130                 135                 140
Lys Gly Glu Lys His Ala Lys Lys Gly Val Cys Ile Trp Glu Cys Ile
145                 150                 155                 160
Asp Arg Met His Lys Arg Ser Pro Ile Phe Phe Asn Tyr Leu Tyr Ser
                165                 170                 175
Pro Leu Glu Ile Glu Ala Leu Lys Pro Asn Val Asn Val Ser Ser Leu
            180                 185                 190
```

Lys Lys Trp Asp Tyr Tyr Ile Glu Glu Thr Leu Ser Thr Gly Pro Ser
    195   200   205
Tyr Asp Trp Met Met Leu Thr Pro Lys His Phe Pro Ser Glu Asp Ser
    210   215   220
Asp Leu Ala Gly Glu Ala Gly Pro Arg Ser Gln Arg Arg Thr Val Trp
225   230   235   240
Pro Cys Tyr Asp Asp Val Ser Cys Thr Gln Pro Asp Ala Leu Thr Ser
            245   250   255
Leu Phe Ser Glu Ile Glu Lys Leu Glu His Lys Leu Asn Gln Ala Pro
            260   265   270
Glu Lys Trp Gln Gln Leu Trp Glu Arg Val Thr Val Asp Leu Lys Glu
    275   280   285
Glu Pro Arg Thr Asp Arg Ser Gln Arg His Leu Ser Arg Ser Pro Gly
    290   295   300
Ile Val Ser Thr Asn Leu Pro Ser Tyr Gln Lys Arg Ser Leu Leu His
305   310   315   320
Leu Pro Asp Ser Ser Met Gly Glu Glu Gln Asn Ser Ser Ile Ser Pro
            325   330   335
Ser Asn Gly Val Glu Arg Arg Ala Ala Thr Leu Tyr Ser Gln Tyr Thr
            340   345   350
Ser Lys Asn Asp Glu Asn Arg Ser Phe Glu Gly Thr Leu Tyr Lys Arg
    355   360   365
Gly Ala Leu Leu Lys Gly Trp Lys Pro Arg Trp Phe Val Leu Asp Val
    370   375   380
Thr Lys His Gln Leu Arg Tyr Tyr Asp Ser Gly Glu Asp Thr Ser Cys
385   390   395   400
Lys Gly His Ile Asp Leu Ala Glu Val Glu Met Val Ile Pro Ala Gly
            405   410   415
Pro Ser Met Gly Ala Pro Lys His Thr Ser Asp Lys Ala Phe Phe Asp
            420   425   430
Leu Lys Thr Ser Lys Arg Val Tyr Asn Phe Cys Ala Gln Asp Gly Gln
    435   440   445
Ser Ala Gln Gln Trp Met Asp Lys Ile Gln Ser Cys Ile Ser Asp Ala
    450   455   460   464

        <210> 1172
        <211> 256
        <212>Amino acid
        <213> Homo sapiens

        <400> 1172
Glu Val Glu Gly Pro Arg Arg Val Ser Pro Ala Pro Glu Thr Leu Gly
    1   5   10   15
Met Glu Glu Ser Val Val Arg Pro Ser Val Phe Val Val Asp Gly Gln
            20   25   30
Thr Asp Ile Pro Phe Thr Arg Leu Gly Arg Ser His Arg Arg Gln Ser
        35   40   45
Cys Ser Val Ala Arg Val Gly Leu Gly Leu Leu Leu Leu Met Gly
    50   55   60
Ala Gly Leu Ala Val Gln Gly Trp Phe Leu Leu Gln Leu His Trp Arg
65   70   75   80
Leu Gly Glu Met Val Thr Arg Leu Pro Asp Gly Pro Ala Gly Ser Trp
                85   90   95
Glu Gln Leu Ile Gln Glu Arg Arg Ser His Glu Val Asn Pro Ala Ala
            100   105   110
His Leu Thr Gly Ala Asn Ser Ser Leu Thr Gly Ser Gly Gly Pro Leu
        115   120   125

698

```
Leu Trp Glu Thr Gln Leu Gly Leu Ala Phe Leu Arg Gly Leu Ser Tyr
    130             135                 140
His Asp Gly Ala Leu Val Val Thr Lys Ala Gly Tyr Tyr Tyr Ile Tyr
145             150                 155                 160
Ser Lys Val Gln Leu Gly Gly Val Gly Cys Pro Leu Gly Leu Ala Ser
            165             170             175
Thr Ile Thr His Gly Leu Tyr Lys Arg Thr Pro Arg Tyr Pro Glu Glu
        180             185             190
Leu Glu Leu Leu Val Ser Gln Gln Ser Pro Cys Gly Arg Ala Thr Ser
        195             200                 205
Ser Ser Arg Val Trp Trp Asp Ser Ser Phe Leu Gly Gly Val Val His
    210             215                 220
Leu Glu Ala Gly Glu Glu Val Val Val Arg Val Leu Asp Glu Arg Leu
225             230             235                 240
Val Arg Leu Arg Asp Gly Thr Arg Ser Tyr Phe Gly Ala Phe Met Val
                245             250                 255 256
```

```
<210> 1173
<211> 117
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(117)
<223> X = any amino acid or stop code
```

```
    <400> 1173
Gln Ser Ala Glu Leu Gly Pro Arg Arg Arg Glu Gly Ser Arg Arg Pro
1               5                   10                  15
Ser Cys Thr Lys Ala Ser Lys Pro Trp Arg Arg Arg Pro Gly Gly Pro
            20              25                  30
Thr Ser Gly Leu Gly Xaa Gly Pro Leu Ser Pro Gly Pro Tyr Gln Cys
        35              40                  45
Arg Pro Ser Leu Pro Ala Gln Leu Tyr Pro Gln Ser Leu Met Ala Ala
    50              55                  60
Ala Thr Leu Arg Thr Pro Thr Gln Val Ser Ala Ala Ser Ser Arg Pro
65              70                  75                  80
His Thr Pro Ser Pro Thr His Val Leu Lys Pro Ser Val Arg Gly Ala
            85                  90                  95
Cys Ser Ser Pro Arg Cys Pro Gly Ser Gly Thr Leu Arg Arg Ser Trp
        100                 105                 110
Val Gly Pro Phe Phe
        115     117
```

```
<210> 1174
<211> 370
<212>Amino acid
<213> Homo sapiens
```

```
    <400> 1174
Leu Trp Trp Pro Pro Leu Ser Arg His Ala Ala His Arg Gln Trp Pro
```

```
  1                    5                    10                   15
Gly Pro Thr Ala Pro Arg Gly Leu Gly His Lys Val Lys Gly Arg Gly
              20                   25                   30
Ala Ser Pro Ala Ala Met Trp Ser Cys Ser Trp Phe Asn Gly Thr Gly
              35                   40                   45
Leu Val Glu Glu Leu Pro Ala Cys Gln Asp Leu Gln Leu Gly Leu Ser
          50                   55                   60
Leu Leu Ser Leu Leu Gly Leu Val Val Gly Val Pro Val Gly Leu Cys
65                   70                   75                   80
Tyr Asn Ala Leu Leu Val Leu Ala Asn Leu His Ser Lys Ala Ser Met
              85                   90                   95
Thr Met Pro Asp Val Tyr Phe Val Asn Met Ala Val Ala Gly Leu Val
          100                  105                  110
Leu Ser Ala Leu Ala Pro Val His Leu Leu Gly Pro Pro Ser Ser Arg
      115                  120                  125
Trp Ala Leu Trp Ser Val Gly Gly Glu Val His Val Ala Leu Gln Ile
  130                  135                  140
Pro Phe Asn Val Ser Ser Leu Val Ala Met Tyr Ser Thr Ala Leu Leu
145                  150                  155                  160
Ser Leu Asp His Tyr Ile Glu Arg Ala Leu Pro Arg Thr Tyr Met Ala
              165                  170                  175
Ser Val Tyr Asn Thr Arg His Val Cys Gly Phe Val Trp Gly Gly Ala
          180                  185                  190
Leu Leu Thr Ser Phe Ser Ser Leu Leu Phe Tyr Ile Cys Ser His Val
      195                  200                  205
Ser Thr Arg Ala Leu Glu Cys Ala Lys Met Gln Asn Ala Glu Ala Ala
210                  215          ,       220
Asp Ala Thr Leu Val Phe Ile Gly Tyr Val Val Pro Ala Leu Ala Thr
225                  230                  235                  240
Leu Tyr Ala Leu Val Leu Leu Ser Arg Val Arg Arg Glu Asp Thr Pro
              245                  250                  255
Leu Asp Arg Asp Thr Gly Arg Leu Glu Pro Ser Ala His Arg Leu Leu
          260                  265                  270
Val Ala Thr Val Cys Thr Gln Phe Gly Leu Trp Thr Pro His Tyr Leu
      275                  280                  285
Ile Leu Leu Gly His Thr Val Ile Ile Ser Arg Gly Lys Pro Val Asp
      290                  295                  300
Ala His Tyr Leu Gly Leu Leu His Phe Val Lys Asp Phe Ser Lys Leu
305                  310                  315                  320
Leu Ala Phe Ser Ser Ser Phe Val Thr Pro Leu Leu Tyr Arg Tyr Met
              325                  330                  335
Asn Gln Ser Phe Pro Ser Lys Leu Gln Arg Leu Met Lys Lys Leu Pro
              340                  345                  350
Cys Gly Asp Arg His Cys Ser Pro Asp His Met Gly Val Gln Gln Val
          355                  360                  365
Leu Ala
370
```

```
<210> 1175
<211> 145
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1175
Ser Glu Ser Glu Leu Phe Thr Leu Met Pro Ser Leu Pro Thr Thr Asn
1                5                    10                   15
Cys Val His Ser Leu Gln Met Ile Pro Pro Leu Ser Pro Ala Pro Asn
          20                   25                   30
Gln Glu Leu Val Leu Gly Leu Cys Tyr Met Ser Tyr Leu Ala Phe Leu
```

```
            35                    40                    45
Tyr Met Thr Phe Asp Phe Cys Cys Leu Tyr Phe Ser Thr Val Tyr Ala
    50                    55                    60
Pro Ser Phe Lys Tyr Ile Cys Val His Thr Asp Thr His Ile Cys Val
65                    70                    75                    80
Cys Val Cys Ile Tyr Leu Ser Ser Val Val Ser Lys Ser Ser Ala Glu
                85                    90                    95
Ala Asp Gly Val Leu Gln Pro Arg Arg His Pro Ala Ser Leu Leu Ile
            100                   105                   110
Val Phe Ala Thr Ser Ile Ser Glu Ser Ser Leu Leu Ile Phe Ser Phe
            115                   120                   125
Gln Lys Thr Glu Ala Lys Leu Ile Val Phe Ala Val Ser Leu Ala Ala
        130                   135                   140
Lys
145
```

```
        <210> 1176
        <211> 50
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1176
Phe Phe Phe Leu Arg Gln Ser Leu Thr Leu Ser Pro Arg Leu Glu Cys
1                   5                   10                   15
Ser Gly Ala Thr Ser Ala Ser Pro Ser Ala Gly Ile Thr Gly Met Ser
            20                    25                    30
His His Ser Gln Pro Ile Val Asn Phe Leu Arg Ala Cys Ile Pro Ile
            35                    40                    45
Ser Lys
    50
```

```
        <210> 1177
        <211> 231
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1177
Arg Gln His Ala Glu Glu Arg Gly Arg Arg Asn Pro Lys Thr Gly Leu
1                   5                   10                   15
Thr Leu Glu Arg Val Gly Pro Glu Ser Ser Pro Tyr Leu Leu Arg Arg
            20                    25                    30
His Gln Arg Gln Gly Gln Glu Gly Glu His Tyr His Ser Cys Val Gln
        35                    40                    45
Leu Ala Pro Thr Arg Gly Leu Glu Glu Ser Gly His Gly Pro Leu Ser
    50                    55                    60
Leu Ala Gly Gly Pro Arg Val Gly Gly Val Ala Ala Ala Ala Thr Glu
65                    70                    75                    80
Ala Pro Arg Met Glu Trp Lys Val Lys Val Arg Ser Asp Gly Thr Arg
                85                    90                    95
Tyr Val Ala Lys Arg Pro Val Arg Asp Arg Leu Leu Lys Ala Arg Ala
            100                   105                   110
Leu Lys Ile Arg Glu Glu Arg Ser Gly Met Thr Thr Asp Asp Asp Ala
        115                   120                   125
Val Ser Glu Met Lys Met Gly Arg Tyr Trp Ser Lys Glu Glu Arg Lys
```

```
         130                      135                    140
Gln His Leu Ile Arg Ala Arg Glu Gln Arg Lys Arg Arg Glu Phe Met
145                      150                    155                    160
Met Gln Ser Arg Leu Glu Cys Leu Arg Glu Gln Gln Asn Gly Asp Ser
                 165                    170                    175
Lys Pro Glu Leu Asn Ile Ile Ala Leu Ser His Arg Lys Thr Met Lys
             180                    185                    190
Lys Arg Asn Lys Lys Ile Leu Asp Asn Trp Ile Thr Ile Gln Glu Met
             195                    200                    205
Leu Ala His Gly Ala Arg Ser Ala Asp Gly Lys Arg Val Tyr Asn Pro
         210                    215                    220
Leu Leu Ser Val Thr Thr Val
225                    230 231
```

```
         <210> 1178
         <211> 204
         <212>Amino acid
         <213> Homo sapiens
```

```
         <400> 1178
Ser Asp Arg Gly Cys Ser Ala Ala Ala Gly Arg Asn Met Thr Ala Val
 1               5               10                    15
Gly Val Gln Ala Gln Arg Pro Leu Gly Gln Arg Gln Pro Arg Arg Ser
             20              25                    30
Phe Phe Glu Ser Phe Ile Arg Thr Leu Ile Ile Thr Cys Val Ala Leu
         35                  40                  45
Ala Val Val Leu Ser Ser Val Ser Ile Cys Asp Gly His Trp Leu Leu
     50                  55                  60
Ala Glu Asp Arg Leu Phe Gly Leu Trp His Phe Cys Thr Thr Thr Asn
65               70                  75                    80
Gln Ser Val Pro Ile Cys Phe Arg Asp Leu Gly Gln Ala His Val Pro
             85                  90                  95
Gly Leu Ala Val Gly Met Gly Leu Val Arg Ser Val Gly Ala Leu Ala
         100                 105                 110
Val Val Ala Ala Ile Phe Gly Leu Glu Phe Leu Met Val Ser Gln Leu
         115                 120                 125
Cys Glu Asp Lys His Ser Gln Cys Lys Trp Val Met Gly Ser Ile Leu
     130                 135                 140
Leu Leu Val Ser Phe Val Leu Ser Ser Gly Gly Leu Leu Gly Phe Val
145                 150                 155                 160
Ile Leu Leu Arg Asn Gln Val Thr Leu Ile Gly Phe Thr Leu Met Phe
                 165                 170                 175
Trp Cys Glu Phe Thr Ala Ser Phe Leu Leu Phe Leu Asn Ala Ile Ser
             180                 185                 190
Gly Leu His Ile Asn Ser Ile Thr His Pro Trp Glu
         195                 200                 204
```

```
         <210> 1179
         <211> 179
         <212>Amino acid
         <213> Homo sapiens
```

```
         <400> 1179
Gln Ile Leu Pro Asn Leu Tyr Leu Gly Ser Ala Arg Asp Ser Ala Asn
```

```
 1                      5                      10                     15
Leu Glu Ser Leu Ala Lys Leu Gly Ile Arg Tyr Ile Leu Asn Val Thr
                   20                     25                     30
Pro Asn Leu Pro Asn Phe Phe Glu Lys Asn Gly Asp Phe His Tyr Lys
                   35                     40                     45
Gln Ile Pro Ile Ser Asp His Trp Ser Gln Asn Leu Ser Arg Phe Phe
         50                     55                     60
Pro Glu Ala Ile Glu Phe Ile Asp Glu Ala Leu Ser Gln Asn Cys Gly
    65                     70                     75                     80
Val Leu Val His Cys Leu Ala Gly Val Ser Arg Ser Val Thr Val Thr
                   85                     90                     95
Val Ala Tyr Leu Met Gln Lys Leu His Leu Ser Leu Asn Asp Ala Tyr
                  100                    105                    110
Asp Leu Val Lys Arg Lys Lys Ser Asn Ile Ser Pro Asn Phe Asn Phe
                  115                    120                    125
Met Gly Gln Leu Leu Asp Phe Glu Arg Ser Leu Arg Leu Glu Glu Arg
    130                    135                    140
His Ser Gln Glu Gln Gly Ser Gly Gly Gln Ala Ser Ala Ala Ser Asn
145                    150                    155                    160
Pro Pro Ser Phe Phe Thr Thr Pro Thr Ser Asp Gly Ala Phe Glu Leu
                  165                    170                    175
Ala Pro Thr
         179
```

```
        <210> 1180
        <211> 159
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1180
Arg Lys Ser Leu His Glu Asn Lys Leu Lys Arg Leu Gln Glu Lys Val
    1                      5                      10                     15
Glu Val Leu Glu Ala Lys Lys Glu Glu Leu Glu Thr Glu Asn Gln Val
                   20                     25                     30
Leu Asn Arg Gln Asn Val Pro Phe Glu Asp Tyr Thr Arg Leu Gln Lys
                   35                     40                     45
Arg Leu Lys Asp Ile Gln Arg Arg His Asn Glu Phe Arg Ser Leu Ile
         50                     55                     60
Leu Val Pro Asn Met Pro Pro Thr Ala Ser Ile Asn Pro Val Ser Phe
    65                     70                     75                     80
Gln Ser Ser Ala Met Gly Ser Lys His Gly Thr Thr Ile Ser Ser Ser
                   85                     90                     95
Tyr Ala Gly Gly Thr Thr Ser Lys Gly Thr Leu Ser Thr Ser Gln Lys
                  100                    105                    110
Thr Arg Arg Thr Gly Asn Asn Thr Lys Lys Thr Thr Arg Gly Thr Trp
         115                    120                    125
Ile Phe Arg Arg Met Met Phe Leu Glu Asn Arg Gln Ile Lys Arg Gly
    130                    135                    140
Glu Val Gly Asp Ser Val Lys Leu Asp Ile Leu Thr Cys Gly Ile
145                    150                    155           159
```

```
        <210> 1181
        <211> 328
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
```

```
<222> (1)...(328)
<223> X = any amino acid or stop code
```

```
<400> 1181
Gly Arg Pro Gly Ala Gly Ala Ser Glu Leu Phe Pro Ser Val Thr Thr
1               5                   10                  15
Asp Leu Ser Val Ser Lys Gln Asn Ala Cys Leu Thr Cys Val Asp Phe
            20                  25                  30
Val Thr Val His Val Cys Met Gly Phe Trp Gly Ile Gly Pro Gly Ala
        35                  40                  45
Leu Ser Thr Ser Cys Ile Pro Tyr Pro Leu Ser His Gly Pro Gly Ser
    50                  55                  60
Val Lys Ala Glu Met Leu His Met Tyr Ser Gln Lys Asp Pro Leu Ile
65                  70                  75                  80
Leu Cys Val Arg Leu Ala Val Leu Leu Ala Val Thr Leu Thr Val Pro
            85                  90                  95
Val Val Leu Phe Pro Ile Arg Arg Ala Leu Gln Gln Leu Leu Phe Pro
            100                 105                 110
Gly Lys Ala Phe Ser Trp Pro Arg His Val Ala Ile Ala Leu Ile Leu
    115                 120                 125
Leu Val Leu Val Asn Val Leu Val Ile Cys Val Pro Thr Ile Arg Asp
    130                 135                 140
Ile Phe Gly Val Ile Gly Ser Thr Ser Ala Pro Ser Leu Ile Phe Ile
145             150                 155                 160
Leu Pro Ser Ile Phe Tyr Leu Arg Ile Val Pro Ser Glu Val Glu Pro
            165                 170                 175
Phe Leu Ser Trp Pro Lys Ile Gln Ala Leu Cys Phe Gly Val Leu Gly
        180                 185                 190
Val Leu Phe Met Ala Val Ser Leu Gly Phe Met Phe Ala Asn Trp Ala
    195                 200                 205
Thr Gly Gln Ser Arg Met Ser Gly His Xaa Ser Gly Pro Ala Gly Pro
    210                 215                 220
Gly Pro Cys Ala His Ala His Gly Gly Val Arg Ala Ala Pro Xaa Gly
225             230                 235                 240
Pro Ser Cys Pro Thr Cys Gly Gly Gly Trp Phe Pro Xaa Thr Trp Leu
            245                 250                 255
Ser Glu Ala Gly Asp Ser Arg Gly Cys Arg Leu Ala His Phe Pro Pro
            260                 265                 270
Pro Gln Gly Cys Gln Ala Trp Ile Met Ala Leu Ile Pro Thr Pro Thr
    275                 280                 285
Pro Trp Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu
    290                 295                 300
Glu Glu Glu Glu Glu Glu Ala Arg Ser Trp Trp Ser Leu Cys Pro Ala
305                 310                 315                 320
Gln Ser Ser Leu Pro Pro Pro Gly
            325         328
```

```
<210> 1182
<211> 144
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1182
Ile Asn Glu Leu Arg Tyr His Leu Glu Glu Ser Arg Asp Lys Asn Val
1               5                   10                  15
```

```
Leu Leu Cys Leu Glu Glu Arg Asp Trp Asp Pro Gly Leu Ala Ile Ile
            20                      25                      30
Asp Asn Leu Met Gln Ser Ile Asn Gln Ser Lys Lys Thr Val Phe Val
            35                      40                      45
Leu Thr Lys Lys Tyr Ala Lys Ser Trp Asn Phe Lys Thr Ala Phe Tyr
    50                      55                      60
Leu Ala Leu Gln Arg Leu Met Asp Glu Asn Met Asp Val Ile Ile Phe
65                  70                      75                      80
Ile Leu Leu Glu Pro Val Leu Gln His Ser Gln Tyr Leu Arg Leu Arg
                85                      90                      95
Gln Arg Ile Cys Lys Ser Ser Ile Leu Gln Trp Pro Asp Asn Pro Lys
            100                     105                     110
Ala Glu Gly Leu Phe Trp Gln Thr Leu Arg Asn Val Val Leu Thr Glu
            115                     120                     125
Asn Asp Ser Arg Tyr Asn Asn Met Tyr Val Asp Ser Ile Lys Gln Tyr
    130                     135                     140             144
```

<210> 1183
<211> 484
<212> Amino acid
<213> Homo sapiens

<400> 1183

```
Asp Asp Pro Ile Lys Thr Ser Trp Thr Pro Pro Arg Tyr Val Leu Ser
1               5                   10                      15
Met Ser Glu Glu Arg His Glu Arg Val Arg Lys Lys Tyr His Ile Leu
            20                      25                      30
Val Glu Gly Asp Gly Ile Pro Pro Pro Ile Lys Ser Phe Lys Glu Met
            35                      40                      45
Lys Phe Pro Ala Ala Ile Leu Arg Gly Leu Lys Lys Lys Gly Ile His
    50                      55                      60
His Pro Thr Pro Ile Gln Ile Gln Gly Ile Pro Thr Ile Leu Ser Gly
65                  70                      75                      80
Arg Asp Met Ile Gly Ile Ala Phe Thr Gly Ser Gly Lys Thr Leu Val
                85                      90                      95
Phe Thr Leu Pro Val Ile Met Phe Cys Leu Glu Gln Glu Lys Arg Leu
            100                     105                     110
Pro Phe Ser Lys Arg Glu Gly Pro Tyr Gly Leu Ile Ile Cys Pro Ser
    115                     120                     125
Arg Glu Leu Ala Arg Gln Thr His Gly Ile Leu Glu Tyr Tyr Cys Arg
    130                     135                     140
Leu Leu Gln Glu Asp Ser Ser Pro Leu Leu Arg Cys Ala Leu Cys Ile
145                     150                     155                 160
Gly Gly Met Ser Val Lys Glu Gln Met Glu Thr Ile Arg His Gly Val
                165                     170                     175
His Met Met Val Ala Thr Pro Gly Arg Leu Met Asp Leu Leu Gln Lys
            180                     185                     190
Lys Met Val Ser Leu Asp Ile Cys Arg Tyr Leu Ala Leu Asp Glu Ala
    195                     200                     205
Asp Arg Met Ile Asp Met Gly Phe Glu Gly Asp Ile Arg Thr Ile Phe
    210                     215                     220
Ser Tyr Phe Lys Gly Gln Arg Gln Thr Leu Leu Phe Ser Ala Thr Met
225                     230                     235                 240
Pro Lys Lys Ile Gln Asn Phe Ala Lys Ser Ala Leu Val Lys Pro Val
                245                     250                     255
Thr Ile Asn Val Gly Arg Ala Gly Ala Ala Ser Leu Asp Val Ile Gln
                260                     265                     270
```

```
Glu Val Glu Tyr Val Lys Glu Glu Ala Lys Met Val Tyr Leu Leu Glu
    275                     280                 285
Cys Leu Gln Lys Thr Pro Pro Pro Val Leu Ile Phe Ala Glu Lys Lys
    290                 295                 300
Ala Asp Val Asp Ala Ile His Glu Tyr Leu Leu Leu Lys Gly Val Glu
305                 310                 315                 320
Ala Val Ala Ile His Gly Gly Lys Asp Gln Glu Glu Arg Thr Lys Ala
            325                 330                 335
Ile Glu Ala Phe Arg Glu Gly Lys Lys Asp Val Leu Val Ala Thr Asp
            340                 345                 350
Val Ala Ser Lys Gly Leu Asp Phe Pro Ala Ile Gln His Val Ile Asn
    355                 360                 365
Tyr Asp Met Pro Glu Glu Ile Glu Asn Tyr Val His Arg Ile Gly Arg
    370                 375                 380
Thr Gly Arg Ser Gly Asn Thr Gly Ile Ala Thr Thr Phe Ile Asn Lys
385                 390                 395                 400
Ala Cys Asp Glu Ser Val Leu Met Asp Leu Lys Ala Leu Leu Leu Glu
            405                 410                 415
Ala Lys Gln Lys Val Pro Pro Val Leu Gln Val Leu His Cys Gly Asp
            420                 425                 430
Glu Ser Met Leu Asp Ile Gly Gly Glu Arg Gly Cys Ala Phe Cys Gly
    435                 440                 445
Gly Leu Gly His Arg Ile Thr Asp Cys Pro Lys Leu Glu Ala Met Gln
    450                 455                 460
Thr Lys Gln Val Ser Asn Ile Gly Arg Lys Asp Tyr Leu Ala His Ser
465                 470                 475                 480
Ser Met Asp Phe
            484
```

```
    <210> 1184
    <211> 125
    <212>Amino acid
    <213> Homo sapiens
```

```
    <400> 1184
Ile Glu Thr Thr Gln Pro Ser Glu Asp Thr Asn Ala Asn Ser Gln Asp
1               5               10              15
Asn Ser Met Gln Pro Glu Thr Ser Ser Gln Gln Gln Leu Leu Ser Pro
            20              25              30
Thr Leu Ser Asp Arg Gly Gly Ser Arg Gln Asp Ala Ala Asp Ala Gly
        35              40              45
Lys Pro Gln Arg Lys Phe Gly Gln Trp Arg Leu Pro Ser Ala Pro Lys
    50              55              60
Pro Ile Ser His Ser Val Ser Ser Val Asn Leu Arg Phe Gly Gly Arg
65              70              75              80
Thr Thr Met Lys Ser Val Val Cys Lys Met Asn Pro Met Thr Asp Ala
            85              90              95
Ala Ser Cys Gly Ser Glu Val Lys Lys Trp Trp Thr Arg Gln Leu Thr
        100             105             110
Val Glu Ser Asp Glu Ser Gly Asp Asp Leu Leu Asp Ile
    115             120             125
```

```
    <210> 1185
    <211> 73
    <212>Amino acid
    <213> Homo sapiens
```

<400> 1185
Asn Asp Arg Phe Ser Ala Cys Tyr Phe Thr Leu Lys Leu Lys Glu Ala
1   5   10   15
Ala Val Arg Gln Arg Glu Ala Leu Lys Lys Leu Thr Lys Asn Ile Ala
                20   25   30
Thr Asp Ser Tyr Ile Ser Val Asn Leu Arg Asp Val Tyr Ala Arg Ser
        .35   40   45
Ile Met Glu Met Leu Arg Leu Lys Gly Arg Glu Arg Ala Ser Thr Arg
        50   55   60
Ser Ser Gly Gly Asp Asp Phe Trp Phe
.65   70   73

<210> 1186
<211> 343
<212> Amino acid
<213> Homo sapiens

<400> 1186
Phe Thr Val Phe Ile Leu Gly Ile Thr Ile Arg Pro Leu Val Glu Phe
1   5   10   15
Leu Asp Val Lys Arg Ser Asn Lys Lys Gln Gln Ala Val Ser Glu Glu
                20   25   30
Ile Tyr Cys Arg Leu Phe Asp His Val Lys Thr Gly Ile Glu Asp Val
        35   40   45
Cys Gly His Trp Gly His Asn Phe Trp Arg Asp Lys Phe Lys Lys Phe
    50   55   60
Asp Asp Lys Tyr Leu Arg Lys Leu Leu Ile Arg Glu Asn Gln Pro Lys
65   70   75   80
Ser Ser Ile Val Ser Leu Tyr Lys Lys Leu Glu Ile Lys His Ala Ile
                85   90   95
Glu Met Ala Glu Thr Gly Met Ile Ser Thr Val Pro Thr Phe Ala Ser
            100   105   110
Leu Asn Asp Cys Arg Glu Glu Lys Ile Arg Lys Val Thr Ser Ser Glu
        115   120   125
Thr Asp Glu Ile Arg Glu Leu Leu Ser Arg Asn Leu Tyr Gln Ile Arg
    130   135   140
Gln Arg Thr Leu Ser Tyr Asn Arg His Ser Leu Thr Ala Asp Thr Ser
145   150   155.   160
Glu Arg Gln Ala Lys Glu Ile Leu Ile Arg Arg His Ser Leu Arg
                165   170   175
Glu Ser Ile Arg Lys Asp Ser Ser Leu Asn Arg Glu His Arg Ala Ser
            180   185   190
Thr Ser Thr Ser Arg Tyr Leu Ser Leu Pro Lys Asn Thr Lys Leu Pro
        195   200   205
Glu Lys Leu Gln Lys Arg Arg Thr Ile Ser Ile Ala Asp Gly Asn Ser
    210   215   220
Ser Asp Ser Asp Ala Asp Ala Gly Thr Thr Val Leu Asn Leu Gln Pro
225   230   235   240
Arg Ala Arg Arg Phe Leu Pro Glu Gln Phe Ser Lys Lys Ser Pro Gln
                245   250   255
Ser Tyr Lys Met Glu Trp Lys Asn Glu Val Asp Val Asp Ser Gly Arg
            260   265   270
Asp Met Pro Ser Thr Pro Pro Thr Pro His Ser Arg Glu Lys Gly Thr
        275   280   285
Gln Thr Ser Gly Leu Leu Gln Gln Pro Leu Leu Ser Lys Asp Gln Ser
    290   295   300

```
Gly Ser Glu Arg Glu Asp Ser Leu Thr Glu Gly Ile Pro Pro Lys Pro
305               310             315             320
Pro Pro Arg Leu Val Trp Arg Ala Ser Glu Pro Gly Ser Arg Lys Ala
            325             330             335
Arg Phe Gly Ser Glu Lys Pro
            340         343
```

```
<210> 1187
<211> 146
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1187
His Glu Glu Ala Ser Gly Leu Ser Val Trp Met Gly Lys Gln Met Glu
1               5               10              15
Pro Leu His Ala Val Pro Pro Ala Ala Ile Thr Leu Ile Leu Ser Leu
            20              25              30
Leu Val Ala Val Phe Thr Glu Cys Thr Ser Asn Val Ala Thr Thr Thr
        35              40              45
Leu Phe Leu Pro Ile Phe Ala Ser Met Ser Arg Ser Ile Gly Leu Asn
    50              55              60
Pro Leu Tyr Ile Met Leu Pro Cys Thr Leu Ser Ala Ser Phe Ala Phe
65              70              75              80
Met Leu Pro Val Ala Thr Pro Pro Asn Ala Ile Val Phe Thr Tyr Gly
            85              90              95
His Leu Lys Val Ala Asp Met Val Lys Thr Gly Val Ile Met Asn Ile
            100             105             110
Ile Gly Val Phe Cys Val Phe Leu Ala Val Asn Thr Trp Gly Arg Ala
        115             120             125
Ile Phe Asp Leu Asp His Phe Pro Asp Trp Ala Asn Val Thr His Ile
130             135             140
Glu Thr
145 146
```

```
<210> 1188
<211> 40
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1188
His Glu Leu Glu Asn Asn Trp Leu Gln His Glu Lys Ala Pro Thr Glu
1               5               10              15
Glu Gly Lys Lys Glu Leu Leu Ala Leu Ser Asn Ala Asn Pro Ser Leu
            20              25              30
Leu Glu Arg His Cys Ala Tyr Leu
        35              40
```

```
<210> 1189
<211> 62
<212> Amino acid
<213> Homo sapiens
```

<400> 1189
Gly Asn Ile Ile Tyr Met Tyr Met Gln Pro Gly Ala Arg Ser Ser Gln
1   5   10   15
Asp Gln Gly Lys Phe Leu Thr Leu Phe Tyr Asn Ile Val Thr Pro Leu
            20   25   30
Leu Asn Pro Leu Ile Tyr Thr Leu Arg Asn Arg Glu Val Lys Gly Ala
            35   40   45
Leu Gly Arg Leu Leu Leu Gly Lys Arg Glu Leu Gly Lys Glu
        50   55   60   62

<210> 1190
<211> 623
<212>Amino acid
<213> Homo sapiens

<400> 1190
Pro Leu Glu Gln Arg Ser Asn Cys Arg Val Asp Pro Arg Val Arg Thr
1   5   10   15
His Thr Met Ala Ser Asp Thr Ser Ser Leu Val Gln Ser His Thr Tyr
            20   25   30
Lys Lys Arg Glu Pro Ala Asp Val Pro Tyr Gln Thr Gly Gln Leu His
            35   40   45
Pro Ala Ile Arg Val Ala Asp Leu Leu Gln His Ile Thr Gln Met Lys
        50   55   60
Cys Ala Glu Gly Tyr Gly Phe Lys Glu Glu Tyr Glu Ser Phe Phe Glu
65   70   75   80
Gly Gln Ser Ala Pro Trp Asp Ser Ala Lys Lys Asp Glu Asn Arg Met
                85   90   95
Lys Asn Arg Tyr Gly Asn Ile Ile Ala Tyr Asp His Ser Arg Val Arg
                100   105   110
Leu Gln Thr Ile Glu Gly Asp Thr Asn Ser Asp Tyr Ile Asn Gly Asn
            115   120   125
Tyr Ile Asp Gly Tyr His Arg Pro Asn His Tyr Ile Ala Thr Gln Gly
    130   135   140
Pro Met Gln Glu Thr Ile Tyr Asp Phe Trp Arg Met Val Trp His Glu
145   150   155   160
Asn Thr Ala Ser Ile Ile Met Val Thr Asn Leu Val Glu Val Gly Arg
                165   170   175
Val Lys Cys Cys Lys Tyr Trp Pro Asp Asp Thr Glu Ile Tyr Lys Asp
                180   185   190
Ile Lys Val Thr Leu Ile Glu Thr Glu Leu Leu Ala Glu Tyr Val Ile
            195   200   205
Arg Thr Phe Ala Val Glu Lys Arg Gly Val His Glu Ile Arg Glu Ile
    210   215   220
Arg Gln Phe His Phe Thr Gly Trp Pro Asp His Gly Val Pro Tyr His
225   230   235   240
Ala Thr Gly Leu Leu Gly Phe Val Arg Gln Val Lys Ser Lys Ser Pro
                245   250   255
Pro Ser Ala Gly Pro Leu Val Val His Cys Ser Ala Gly Ala Gly Arg
                260   265   270
Thr Gly Cys Phe Ile Val Ile Asp Ile Met Leu Asp Met Ala Glu Arg
                275   280   285
Glu Gly Val Val Asp Ile Tyr Asn Cys Val Arg Glu Leu Arg Ser Arg
    290   295   300
Arg Val Asn Met Val Gln Thr Glu Glu Gln Tyr Val Phe Ile His Asp
305   310   315   320

```
Ala Ile Leu Glu Ala Cys Leu Cys Gly Asp Thr Ser Val Pro Ala Ser
                325                 330                 335
Gln Val Arg Ser Leu Tyr Tyr Asp Met Asn Lys Leu Asp Pro Gln Thr
                340                 345                 350
Asn Ser Ser Gln Ile Lys Glu Glu Phe Arg Thr Leu Asn Met Val Thr
        355                 360                 365
Pro Thr Leu Arg Val Glu Asp Cys Ser Ile Ala Leu Leu Pro Arg Asn
    370                 375                 380
His Glu Lys Asn Arg Cys Met Asp Ile Leu Pro Pro Asp Arg Cys Leu
385                 390                 395                 400
Pro Phe Leu Ile Thr Ile Asp Gly Glu Ser Ser Asn Tyr Ile Asn Ala
                405                 410                 415
Ala Leu Met Asp Ser Tyr Lys Gln Pro Ser Ala Phe Ile Val Thr Gln
                420                 425                 430
His Pro Leu Pro Asn Thr Val Lys Asp Phe Trp Arg Leu Val Leu Asp
        435                 440                 445
Tyr His Cys Thr Ser Val Val Met Leu Asn Asp Val Asp Pro Ala Gln
    450                 455                 460
Leu Cys Pro Gln Tyr Trp Pro Glu Asn Gly Val His Arg His Gly Pro
465                 470                 475                 480
Ile Gln Val Glu Phe Val Ser Ala Asp Leu Glu Glu Asp Ile Ile Ser
                485                 490                 495
Arg Ile Phe Arg Ile Tyr Asn Ala Ala Arg Pro Gln Asp Gly Tyr Arg
                500                 505                 510
Met Val Gln Gln Phe Gln Phe Leu Gly Trp Pro Met Tyr Arg Asp Thr
        515                 520                 525
Pro Val Ser Lys Arg Ser Phe Leu Lys Leu Ile Arg Gln Val Asp Lys
    530                 535                 540
Trp Gln Glu Glu Tyr Asn Gly Gly Glu Gly Arg Thr Val Val His Cys
545                 550                 555                 560
Leu Asn Gly Gly Gly Arg Ser Gly Thr Phe Cys Ala Ile Ser Ile Val
                565                 570                 575
Cys Glu Met Leu Arg His Gln Arg Thr Val Asp Val Phe His Ala Val
                580                 585                 590
Lys Thr Leu Arg Asn Asn Lys Pro Asn Met Val Asp Leu Leu Asp Gln
        595                 600                 605
Tyr Lys Phe Cys Tyr Glu Val Ala Leu Glu Tyr Leu Asn Ser Gly
    610                 615                 620         623
```

```
<210> 1191
<211> 86
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1191
Pro Leu Thr Tyr Asn Lys Lys Tyr Thr Tyr Pro Trp Trp Gly Asp Ala
1                 5                 10                  15
Leu Gly Trp Leu Leu Ala Leu Ser Ser Met Val Cys Ile Pro Ala Trp
                20                  25                  30
Ser Leu Tyr Arg Leu Gly Thr Leu Lys Gly Pro Phe Arg Glu Arg Ile
        35                  40                  45
Arg Gln Leu Met Cys Pro Ala Glu Asp Leu Pro Gln Arg Asn Pro Ala
    50                  55                  60
Gly Pro Ser Ala Pro Ala Thr Pro Arg Thr Ser Leu Leu Arg Leu Thr
65                  70                  75                  80
Glu Leu Glu Ser His Cys
                85  86
```

```
<210> 1192
<211> 109
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1192
Thr Leu Ser Glu Ser Gly Ala Leu Phe Ser Leu Gly Pro Pro Pro Leu
1               5                   10                  15
Ser Leu Lys Ser Ser Ser Ala Pro Arg Pro Tyr Ser Thr Leu Arg Asp
            20                  25                  30
Cys Leu Glu His Phe Ala Glu Leu Phe Asp Leu Gly Phe Pro Asn Pro
        35                  40                  45
Leu Ala Glu Arg Ile Ile Phe Glu Thr His Gln Ile His Phe Ala Asn
    50                  55                  60
Cys Ser Leu Gly Gln Pro Thr Phe Ser Asp Pro Pro Glu Asp Val Leu
65              70                  75                  80
Leu Ala Met Ile Ile Ala Pro Ile Cys Leu Ile Pro Phe Leu Ile Thr
                85                  90                  95
Leu Val Val Trp Arg Ser Lys Asp Ser Glu Ala Gln Ala
                100                 105                 109
```

```
<210> 1193
<211> 257
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1193
Cys Glu Glu Arg Glu Gln Glu Lys Asp Asp Val Asp Val Ala Leu Leu
1               5                   10                  15
Pro Thr Ile Val Glu Lys Val Ile Leu Pro Lys Leu Thr Val Ile Ala
            20                  25                  30
Glu Asn Met Trp Asp Pro Phe Ser Thr Thr Gln Thr Ser Arg Met Val
        35                  40                  45
Gly Ile Thr Leu Lys Leu Ile Asn Gly Tyr Pro Ser Val Val Asn Ala
    50                  55                  60
Glu Asn Lys Asn Thr Gln Val Tyr Leu Lys Ala Leu Leu Leu Arg Met
65              70                  75                  80
Arg Arg Thr Leu Asp Asp Asp Val Phe Met Pro Leu Tyr Pro Lys Asn
                85                  90                  95
Val Leu Glu Asn Lys Asn Ser Gly Pro Tyr Leu Phe Phe Gln Arg Gln
                100                 105                 110
Phe Trp Ser Ser Val Lys Leu Leu Gly Asn Phe Leu Gln Trp Tyr Gly
        115                 120                 125
Ile Phe Ser Asn Lys Thr Leu Gln Glu Leu Ser Ile Asp Gly Leu Leu
    130                 135                 140
Asn Arg Tyr Ile Leu Met Ala Phe Gln Asn Ser Glu Tyr Gly Asp Asp
145                 150                 155                 160
Ser Ile Lys Lys Ala Gln Asn Val Ile Asn Cys Phe Pro Lys Gln Trp
            165                 170                 175
Phe Met Asn Leu Lys Gly Glu Arg Thr Ile Ser Gln Leu Glu Asn Phe
            180                 185                 190
Cys Arg Tyr Leu Val His Leu Ala Asp Thr Ile Tyr Arg Asn Ser Ile
        195                 200                 205
Gly Cys Ser Asp Val Glu Lys Arg Asn Ala Arg Glu Asn Ile Lys Gln
    210                 215                 220
```

```
Ile Val Lys Leu Leu Ala Ser Val Arg Ala Leu Asp His Ala Met Ser
225                 230                 235                 240
Val Ala Ser Asp His Asn Val Lys Glu Phe Lys Ser Leu Ile Glu Gly
                245                 250                 255
Lys
257
```

```
<210> 1194
<211> 416
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1194
Thr Pro Phe Cys Phe Leu Cys Ser Leu Val Phe Arg Ser Arg Val Trp
 1               5                  10                  15
Ala Glu Pro Cys Leu Ile Asp Ala Ala Lys Glu Glu Tyr Asn Gly Val
                20                  25                  30
Ile Glu Glu Phe Leu Ala Thr Gly Glu Lys Leu Phe Gly Pro Tyr Val
            35                  40                  45
Trp Gly Arg Tyr Asp Leu Leu Phe Met Pro Pro Ser Phe Pro Phe Gly
     50                  55                  60
Gly Met Glu Asn Pro Cys Leu Thr Phe Val Thr Pro Cys Leu Leu Ala
 65                  70                  75                  80
Gly Asp Arg Ser Leu Ala Asp Val Ile Ile His Glu Ile Ser His Ser
                85                  90                  95
Trp Phe Gly Asn Leu Val Thr Asn Ala Asn Trp Gly Glu Phe Trp Leu
                100                 105                 110
Asn Glu Gly Phe Thr Met Tyr Ala Gln Arg Arg Ile Ser Thr Ile Leu
            115                 120                 125
Phe Gly Ala Ala Tyr Thr Cys Leu Glu Ala Ala Thr Gly Arg Ala Leu
    130                 135                 140
Leu Arg Gln His Met Asp Ile Thr Gly Glu Glu Asn Pro Leu Asn Lys
145                 150                 155                 160
Leu Arg Val Lys Ile Glu Pro Gly Val Asp Pro Asp Asp Thr Tyr Asn
                165                 170                 175
Glu Thr Pro Tyr Glu Lys Gly Phe Cys Phe Val Ser Tyr Leu Ala His
                180                 185                 190
Leu Val Gly Asp Gln Asp Gln Phe Asp Ser Phe Leu Lys Ala Tyr Val
    195                 200                 205
His Glu Phe Lys Phe Arg Ser Ile Leu Ala Asp Asp Phe Leu Asp Phe
    210                 215                 220
Tyr Leu Glu Tyr Phe Pro Glu Leu Lys Lys Lys Arg Val Asp Ile Ile
225                 230                 235                 240
Pro Gly Phe Glu Phe Asp Arg Trp Leu Asn Thr Pro Gly Trp Pro Pro
                245                 250                 255
Tyr Leu Pro Asp Leu Ser Pro Gly Asp Ser Leu Met Lys Pro Ala Glu
                260                 265                 270
Glu Leu Ala Gln Leu Trp Ala Ala Glu Glu Leu Asp Met Lys Ala Ile
    275                 280                 285
Glu Ala Val Ala Ile Ser Pro Trp Lys Thr Tyr Gln Leu Val Tyr Phe
    290                 295                 300
Leu Asp Lys Ile Leu Gln Lys Ser Pro Leu Pro Pro Gly Asn Val Lys
305                 310                 315                 320
Lys Leu Gly Asp Thr Tyr Pro Ser Ile Ser Asn Ala Arg Asn Ala Glu
                325                 330                 335
Leu Arg Leu Arg Trp Gly Gln Ile Val Leu Lys Asn Asp His Gln Glu
            340                 345                 350
Asp Phe Trp Lys Val Lys Glu Phe Leu His Asn Gln Gly Lys Gln Lys
        355                 360                 365
```

712

Tyr Thr Leu Pro Leu Tyr His Ala Met Met Gly Gly Ser Glu Val Ala
    370   375   380
Gln Thr Leu Ala Lys Glu Thr Phe Ala Ser Thr Ala Ser Gln Leu His
385   390   395   400
Ser Asn Val Val Asn Tyr Val Gln Gln Ile Val Ala Pro Lys Gly Ser
                405   410   415 416

<210> 1195
<211> 295
<212>Amino acid
<213> Homo sapiens

<400> 1195
Cys Ala Ser Gly Ser Ser Gly Trp Arg Pro Val Leu Trp Ala Gly Ala
  1   5   10   15
Phe Thr Met Ala Ser Ala Glu Leu Asp Tyr Thr Ile Glu Ile Pro Asp
            20   25   30
Gln Pro Cys Trp Ser Gln Lys Asn Ser Pro Ser Pro Gly Gly Lys Glu
        35   40   45
Ala Glu Thr Arg Gln Pro Val Val Ile Leu Leu Gly Trp Gly Gly Cys
    50   55   60
Lys Asp Lys Asn Leu Ala Lys Tyr Ser Ala Ile Tyr His Lys Arg Gly
65   70   75   80
Cys Ile Val Ile Arg Tyr Thr Ala Pro Trp His Met Val Phe Phe Ser
                85   90   95
Glu Ser Leu Gly Ile Pro Ser Leu Arg Val Leu Ala Gln Lys Leu Leu
            100   105   110
Glu Leu Leu Phe Asp Tyr Glu Ile Glu Lys Glu Pro Leu Leu Phe His
        115   120   125
Val Phe Ser Asn Gly Gly Val Met Leu Tyr Arg Tyr Val Leu Glu Leu
    130   135   140
Leu Gln Thr Arg Arg Phe Cys Arg Leu Arg Val Val Gly Thr Ile Phe
145   150   155   160
Asp Ser Ala Pro Gly Asp Ser Asn Leu Val Gly Ala Leu Arg Ala Leu
            165   170   175
Ala Ala Ile Leu Glu Arg Arg Ala Ala Met Leu Arg Leu Leu Leu Leu
            180   185   190
Val Ala Phe Ala Leu Val Val Val Leu Phe His Val Leu Leu Ala Pro
    195   200   205
Ile Thr Ala Leu Phe His Thr His Phe Tyr Asp Arg Leu Gln Asp Ala
    210   215   220
Gly Ser Arg Trp Pro Glu Leu Tyr Leu Tyr Ser Arg Ala Asp Glu Val
225   230   235   240
Val Leu Ala Arg Asp Ile Glu Arg Met Val Glu Ala Arg Leu Ala Arg
                245   250   255
Arg Val Leu Ala Arg Ser Val Asp Phe Val Ser Ser Ala His Val Ser
                260   265   270
His Leu Arg Asp Tyr Pro Thr Tyr Tyr Thr Ser Leu Cys Val Asp Phe
        275   280   285
Met Arg Asn Trp Val Arg Cys
    290   295

<210> 1196
<211> 97
<212>Amino acid
<213> Homo sapiens

<400> 1196

```
Pro Arg Val Arg Asp Arg Leu Pro Ser Thr Gly Val Arg Asp Arg Lys
1               5                   10                  15
Gly Asp Lys Pro Trp Lys Glu Ser Gly Gly Ser Val Glu Ala Pro Arg
            20                  25                  30
Met Gly Phe Thr His Pro Pro Gly His Leu Ser Gly Cys Gln Ser Ser
        35                  40                  45
Leu Ala Ser Gly Glu Thr Gly Thr Gly Ser Ala Asp Pro Pro Gly Gly
    50                  55                  60
Pro Arg Pro Gly Leu Thr Arg Arg Ala Pro Val Lys Asp Thr Pro Gly
65                  70                  75                  80
Arg Ala Pro Ala Ala Asp Ala Ala Pro Ala Gly Pro Ser Ser Cys Leu
                85                  90                  95
Gly
97
```

<210> 1197
<211> 204
<212>Amino acid
<213> Homo sapiens

<400> 1197

```
Gln Gly Arg Thr Ser Cys Ile Gly Leu Tyr Thr Tyr Gln Arg Arg Ile
1               5                   10                  15
Cys Lys Tyr Arg Asp Gln Tyr Asn Trp Phe Phe Leu Ala Arg Pro Thr
            20                  25                  30
Thr Phe Ala Ile Ile Glu Asn Leu Lys Tyr Phe Leu Leu Lys Lys Asp
        35                  40                  45
Pro Ser Gln Pro Phe Tyr Leu Gly His Thr Ile Lys Ser Gly Asp Leu
    50                  55                  60
Glu Tyr Val Gly Met Glu Gly Gly Ile Val Leu Ser Val Glu Ser Met
65                  70                  75                  80
Lys Arg Leu Asn Ser Leu Leu Asn Ile Pro Glu Lys Cys Pro Glu Gln
                85                  90                  95
Gly Gly Met Ile Trp Lys Ile Ser Glu Asp Lys Gln Leu Ala Val Cys
            100                 105                 110
Leu Lys Tyr Ala Gly Val Phe Ala Glu Asn Ala Glu Asp Ala Asp Gly
    115                 120                 125
Lys Asp Val Phe Asn Thr Lys Ser Val Gly Leu Ser Ile Lys Glu Ala
130                 135                 140
Met Thr Tyr His Pro Asn Gln Val Val Glu Gly Cys Cys Ser Asp Met
145                 150                 155                 160
Ala Val Thr Phe Asn Gly Leu Thr Pro Asn Gln Met His Val Met Met
                165                 170                 175
Tyr Gly Val Tyr Arg Leu Arg Ala Phe Gly His Ile Phe Asn Asp Ala
            180                 185                 190
Leu Val Phe Leu Pro Pro Asn Gly Ser Asp Asn Asp
    195                 200                 204
```

<210> 1198
<211> 238
<212>Amino acid
<213> Homo sapiens

<400> 1198

```
His Glu Gly Lys Pro Thr Arg Gly Arg Gly Arg Gly Gly Ser Leu Ser
 1               5              10                 15
Thr Arg Gly Arg Gly Ser Glu Val Pro Asp Ser Ala His Leu Ala Pro
         20              25                 30
Thr Pro Leu Phe Ser Glu Ser Gly Cys Cys Gly Leu Arg Ser Arg Phe
         35              40                 45
Leu Thr Asp Cys Lys Met Glu Glu Gly Gly Asn Leu Gly Gly Leu Ile
     50              55                 60
Lys Met Val His Leu Leu Val Leu Ser Gly Ala Trp Gly Met Gln Met
 65              70                 75                 80
Trp Val Thr Phe Val Ser Gly Phe Leu Leu Phe Arg Ser Leu Pro Arg
             85              90                 95
His Thr Phe Gly Leu Val Gln Ser Lys Leu Phe Pro Phe Tyr Phe His
         100                 105                110
Ile Ser Met Gly Cys Ala Phe Ile Asn Leu Cys Ile Leu Ala Ser Gln
         115                 120                125
His Ala Trp Ala Gln Leu Thr Phe Trp Glu Ala Ser Gln Leu Tyr Leu
     130                 135                140
Leu Phe Leu Ser Leu Thr Leu Ala Thr Val Asn Ala Arg Trp Leu Glu
145                 150                155                160
Pro Arg Thr Thr Ala Ala Met Trp Ala Leu Gln Thr Val Glu Lys Glu
             165                170                175
Arg Gly Leu Gly Gly Glu Val Pro Gly Ser His Gln Gly Pro Asp Pro
         180                 185                190
Tyr Arg Gln Leu Arg Glu Lys Asp Pro Lys Tyr Ser Ala Leu Arg Gln
     195                 200                205
Asn Phe Phe Arg Tyr His Gly Leu Ser Ser Leu Cys Asn Leu Gly Cys
210                 215                220
Val Leu Ser Asn Gly Leu Cys Leu Ala Ala Leu Pro Trp Lys
225                 230                235    238
```

<210> 1199
<211> 100
<212> Amino acid
<213> Homo sapiens

<400> 1199

```
Lys Gln Leu Asp Lys Gln Leu Arg Ala Asp Pro Ser Gly Ser Leu Pro
 1               5              10                 15
Pro Leu Pro Pro Ser Pro Pro Pro Leu Glu Ala Gly Gly Arg Pro
             20              25                 30
Pro Glu Val Pro Pro Arg Gly Pro Ser Ala Val Pro Ser Phe Pro Ser
         35              40                 45
Val Ser Gly Asp Trp Gly Gly Pro Val Glu Ala Gly Glu Gly Gly Gln
     50              55                 60
Gln Gly Arg Gly Arg Ala Arg Ala Arg Pro Cys Ser Leu Pro Pro Leu
 65              70                 75                 80
Leu Pro Pro Ser Pro Val Cys Arg Leu Ser Gly Ser Arg Ala Pro Leu
             85              90                 95
Gly Cys Asp Gly
         100
```

<210> 1200
<211> 194
<212>Amino acid
<213> Homo sapiens

<400> 1200
Arg Asn Gln Leu Ser Ser Gln Lys Ser Val Pro Trp Val Pro Ile Leu
1   5   10   15
Lys Ser Leu Pro Leu Trp Ala Ile Val Val Ala His Phe Ser Tyr Asn
        20   25   30
Trp Thr Phe Tyr Thr Leu Leu Thr Leu Leu Pro Thr Tyr Met Lys Glu
        35   40   45
Ile Leu Arg Phe Asn Val Gln Glu Asn Gly Phe Leu Ser Ser Leu Pro
    50   55   60
Tyr Leu Gly Ser Trp Leu Cys Met Ile Leu Ser Gly Gln Ala Ala Asp
65   70   75   80
Asn Leu Arg Ala Lys Trp Asn Phe Ser Thr Leu Cys Val Arg Arg Ile
            85   90   95
Phe Ser Leu Ile Gly Met Ile Gly Pro Ala Val Phe Leu Val Ala Ala
            100   105   110
Gly Phe Ile Gly Cys Asp Tyr Ser Leu Ala Val Ala Phe Leu Thr Ile
    115   120   125
Ser Thr Thr Leu Gly Gly Phe Cys Ser Ser Gly Phe Ser Ile Asn His
130   135   140
Leu Asp Ile Ala Pro Ser Tyr Ala Gly Ile Leu Leu Gly Ile Thr Asn
145   150   155   160
Thr Phe Ala Thr Ile Pro Gly Met Val Gly Pro Val Ile Ala Lys Ser
            165   170   175
Leu Thr Pro Asp Met Gly Ile Ser Leu His Arg Pro Gly Trp Ser Ala
            180   185   190
Val Ala
194

<210> 1201
<211> 119
<212>Amino acid
<213> Homo sapiens

<400> 1201
Gly Pro Ser Gly Thr Thr His Ala Ser Ala His Ser Gly His Pro Gly
1   5   10   15
Ser Pro Arg Gly Ser Leu Ser Arg His Pro Ser Ser Gln Leu Ala Gly
        20   25   30
Pro Gly Val Glu Gly Gly Glu Gly Thr Gln Lys Pro Arg Asp Tyr Ile
        35   40   45
Ile Leu Ala Ile Leu Ser Cys Phe Cys Pro Met Trp Pro Val Asn Ile
    50   55   60
Val Ala Phe Ala Tyr Ala Val Met Ser Arg Asn Ser Leu Gln Gln Gly
65   70   75   80
Asp Val Asp Gly Ala Gln Arg Leu Gly Arg Val Ala Lys Leu Leu Ser
            85   90   95
Ile Val Ala Leu Val Gly Gly Val Leu Ile Ile Ile Ala Ser Cys Val
            100   105   110
Ile Asn Leu Gly Val Tyr Lys
            115   119

716

<210> 1202
<211> 66
<212>Amino acid
<213> Homo sapiens

<400> 1202
Ser Leu Phe Leu Ser Phe Pro Pro Leu Ser Phe Lys Met Thr Leu Asn
1   5   10   15
Asp Ala Met Arg Asn Lys Ala Arg Leu Ser Ile Thr Gly Ser Thr Gly
            20   25   30
Glu Asn Gly Arg Val Met Thr Pro Glu Phe Pro Lys Ala Val His Ala
        35   40   45
Val Pro Tyr Val Ser Pro Gly Met Gly Met Asn Val Ser Val Thr Asp
    50   55   60
Leu Ser
65 66

<210> 1203
<211> 509
<212>Amino acid
<213> Homo sapiens

<400> 1203
Asp Asp Val Pro Pro Pro Ala Pro Asp Leu Tyr Asp Val Pro Pro Gly
1   5   10   15
Leu Arg Arg Pro Gly Pro Gly Thr Leu Tyr Asp Val Pro Arg Glu Arg
            20   25   30
Val Leu Pro Pro Glu Val Ala Asp Gly Gly Val Val Asp Ser Gly Val
        35   40   45
Tyr Ala Val Pro Pro Pro Ala Glu Arg Glu Ala Pro Ala Glu Gly Lys
    50   55   60
Arg Leu Ser Ala Ser Ser Thr Gly Ser Thr Arg Ser Ser Gln Ser Ala
65   70   75   80
Ser Ser Leu Glu Val Ala Gly Pro Gly Arg Glu Pro Leu Glu Leu Glu
                85   90   95
Val Ala Val Glu Ala Leu Ala Arg Leu Gln Gln Gly Val Ser Ala Thr
            100   105   110
Val Ala His Leu Leu Asp Leu Ala Gly Ser Ala Gly Ala Thr Gly Ser
        115   120   125
Trp Arg Ser Pro Ser Glu Pro Gln Glu Pro Leu Val Gln Asp Leu Gln
    130   135   140
Ala Ala Val Ala Ala Val Gln Ser Ala Val His Glu Leu Leu Glu Phe
145   150   155   160
Ala Arg Ser Ala Val Gly Asn Ala Ala His Thr Ser Asp Arg Ala Leu
                165   170   175
His Ala Lys Leu Ser Arg Gln Leu Gln Lys Met Glu Asp Val His Gln
            180   185   190
Thr Leu Val Ala His Gly Gln Ala Leu Asp Ala Gly Arg Gly Gly Ser
        195   200   205
Gly Ala Thr Leu Glu Asp Leu Asp Arg Leu Val Ala Cys Ser Arg Ala
    210   215   220
Val Pro Glu Asp Ala Lys Gln Leu Ala Ser Phe Leu His Gly Asn Ala
225   230   235   240

717

```
.Ser Leu Leu Phe Arg Arg Thr Lys Ala Thr Ala Pro Gly Pro Glu Gly
              245                 250                 255
Gly Gly Thr Leu His Pro Asn Pro Thr Asp Lys Thr Ser Ser Ile Gln
          260                 265                 270
Ser Arg Pro Leu Pro Ser Pro Pro Lys Phe Thr Ser Gln Asp Ser Pro
      275                 280                 285
Asp Gly Gln Tyr Glu Asn Ser Glu Gly Gly Trp Met Glu Asp Tyr Asp
    290                 295                 300
Tyr Val His Leu Gln Gly Lys Glu Glu Phe Glu Lys Thr Gln Lys Glu
305                 310                 315                 320
Leu Leu Glu Lys Gly Ser Ile Thr Arg Gln Gly Lys Ser Gln Leu Glu
              325                 330                 335
Leu Gln Gln Leu Lys Gln Phe Glu Arg Leu Glu Gln Glu Val Ser Arg
          340                 345                 350
Pro Ile Asp His Asp Leu Ala Asn Trp Thr Pro Ala Gln Pro Leu Ala
      355                 360                 365
Pro Gly Arg Thr Gly Gly Leu Gly Pro Ser Asp Arg Gln Leu Leu Leu
    370                 375                 380
Phe Tyr Leu Glu Gln Cys Glu Ala Asn Leu Thr Thr Leu Thr Asn Ala
385                 390                 395                 400
Val Asp Ala Phe Phe Thr Ala Val Ala Thr Asn Gln Pro Pro Lys Ile
              405                 410                 415
Phe Val Ala His Ser Lys Phe Val Ile Leu Ser Ala His Lys Leu Val
          420                 425                 430
Phe Ile Gly Asp Thr Leu Ser Arg Gln Ala Lys Ala Ala Asp Val Arg
      435                 440                 445
Ser Gln Val Thr His Tyr Ser Asn Leu Leu Cys Asp Leu Leu Arg Gly
    450                 455                 460
Ile Val Ala Thr Thr Lys Ala Ala Ala Leu Gln Tyr Pro Ser Pro Ser
465                 470                 475                 480
Ala Ala Gln Asp Met Val Glu Arg Val Lys Glu Leu Gly His Ser Thr
              485                 490                 495
Gln Gln Phe Arg Arg Val Leu Gly Gln Leu Ala Ala Ala
              500                 505                 509


    <210> 1204
    <211> 453
    <212>Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(453)
    <223> X = any amino acid or stop code




    <400> 1204
Glu Met Glu Glu Pro Gln Lys Ser Tyr Val Asn Thr Met Asp Leu Glu
1                 5                 10                  15
Arg Asp Glu Pro Leu Lys Ser Thr Gly Pro Gln Ile Ser Val Ser Glu
          ·20                 25                  30
Phe Ser Cys His Cys Cys Tyr Asp Ile Leu Val Asn Pro Thr Thr Leu
      35                  40                  45
Asn Cys Gly His Ser Phe Cys Arg His Cys Leu Ala Leu Trp Trp Ala .
    50                  55                  60
Ser Ser Lys Lys Thr Glu Cys Pro Glu Cys Arg Glu Lys Trp Glu Gly
65                  70                  75                  80
Phe Pro Lys Val Ser Ile Leu Leu Arg Asp Ala Ile Glu Lys Leu Phe
              85                  90                  95
Pro Asp Ala Ile Arg Leu Arg Phe Glu Asp Ile Gln Gln Asn Asn Asp
```

```
                      100                    105                    110
Ile Val Gln Ser Leu Ala Ala Phe Gln Lys Tyr Gly Asn Asp Gln Ile
              115                    120                    125
Pro Leu Ala Pro Asn Thr Gly Arg Ala Asn Gln Gln Met Gly Gly Gly
         130                    135                    140
Phe Phe Ser Gly Val Leu Thr Ala Leu Thr Gly Val Ala Val Val Leu
145                    150                    155                    160
Leu Val Tyr His Trp Ser Ser Arg Glu Ser Glu His Asp Leu Leu Val
                  165                    170                    175
His Lys Ala Val Ala Lys Trp Thr Ala Glu Glu Val Val Leu Trp Leu
              180                    185                    190
Glu Gln Leu Gly Pro Trp Ala Ser Leu Tyr Arg Glu Arg Phe Leu Ser
         195                    200                    205
Glu Arg Val Asn Gly Arg Leu Leu Leu Thr Leu Thr Glu Glu Glu Phe
         210                    215                    220
Ser Lys Thr Pro Tyr Thr Ile Glu Asn Ser Ser His Arg Arg Ala Ile
225                    230                    235                    240
Leu Met Glu Leu Glu Arg Val Lys Ala Leu Gly Val Lys Pro Pro Gln
                  245                    250                    255
Asn Leu Trp Glu Tyr Lys Ala Val Asn Pro Gly Arg Ser Leu Phe Leu
                  260                    265                    270
Leu Tyr Ala Leu Lys Ser Ser Pro Arg Leu Ser Leu Leu Tyr Leu Tyr
         275                    280                    285
Leu Phe Asp Tyr Thr Asp Thr Phe Leu Pro Phe Ile His Thr Ile Cys
         290                    295                    300
Pro Leu Gln Glu Asp Ser Ser Gly Glu Asp Ile Val Thr Lys Leu Leu
305                    310                    315                    320
Asp Leu Lys Glu Pro Thr Trp Lys Gln Trp Arg Glu Phe Leu Val Lys
                  325                    330                    335
Tyr Ser Phe Leu Pro Tyr Gln Leu Ile Ala Glu Phe Ala Trp Asp Trp
                  340                    345                    350
Leu Glu Val His Tyr Trp Thr Ser Arg Phe Leu Ile Ile Asn Ala Met
         355                    360                    365
Leu Leu Ser Val Leu Glu Leu Phe Ser Phe Trp Arg Ile Trp Ser Arg
370                    375                    380
Ser Glu Leu Lys Xaa Val Gly Phe Arg Phe Leu Arg Leu Gly Val Ala
385                    390                    395                    400
Ala Leu Gly Ser Val Glu Val Ala Gly Leu Arg Gly Val Val Lys Gly
                  405                    410                    415
Glu Arg Pro Leu Leu Tyr Gly His Gly Ala Gly Ala Arg Phe Pro His
         420                    425                    430
Ser Val Leu Leu Leu Pro Val Ala Lys Pro Leu Pro Leu Pro Leu Leu
         435                    440                    445
Pro Arg Gly Leu Cys
450                    453
```

```
     <210> 1205
     <211> 80
     <212>Amino acid
     <213> Homo sapiens
```

```
     <400> 1205
Glu Lys Ala Arg Met Ile Tyr Glu Asp Tyr Ile Ser Ile Leu Ser Pro
 1                5                    10                    15
Lys Glu Val Ser Leu Asp Ser Arg Val Arg Glu Val Ile Asn Arg Asn
              20                    25                    30
Leu Leu Asp Pro Asn Pro His Met Tyr Glu Asp Ala Gln Leu Gln Ile
         35                    40                    45
Tyr Thr Leu Met His Arg Asp Ser Phe Pro Arg Phe Leu Asn Ser Gln
```

```
        50                      55                      60
Ile Tyr Lys Ser Phe Val Glu Ser Thr Ala Gly Ser Ser Ser Glu Ser
 65                      70                      75                      80
```

<210> 1206
<211> 205
<212> Amino acid
<213> Homo sapiens

<400> 1206
```
Leu Tyr Tyr Ser Gln Asp Glu Glu Ser Lys Ile Met Ile Ser Asp Phe
 1               5                      10                      15
Gly Leu Ser Lys Met Glu Gly Lys Gly Asp Val Met Ser Thr Ala Cys
                20                      25                      30
Gly Thr Pro Gly Tyr Val Ala Pro Glu Val Leu Ala Gln Lys Pro Tyr
                35                      40                      45
Ser Lys Ala Val Asp Cys Trp Ser Ile Gly Val Ile Ala Tyr Ile Leu
     50                      55                      60
Leu Cys Gly Tyr Pro Pro Phe Tyr Asp Glu Asn Asp Ser Lys Leu Phe
 65                      70                      75                      80
Glu Gln Ile Leu Lys Ala Glu Tyr Glu Phe Asp Ser Pro Tyr Trp Asp
                85                      90                      95
Asp Ile Ser Asp Ser Ala Lys Asp Phe Ile Arg Asn Leu Met Glu Lys
                100                     105                     110
Asp Pro Asn Lys Arg Tyr Thr Cys Glu Gln Ala Ala Arg His Pro Trp
                115                     120                     125
Ile Ala Gly Asp Thr Ala Leu Asn Lys Asn Ile His Glu Ser Val Ser
                130                     135                     140
Ala Gln Ile Arg Lys Asn Phe Ala Lys Ser Lys Trp Arg Gln Ala Phe
145                     150                     155                     160
Asn Ala Thr Ala Val Val Arg His Met Arg Lys Leu His Leu Gly Ser
                165                     170                     175
Ser Leu Asp Ser Ser Asn Ala Ser Val Ser Ser Ser Leu Ser Leu Ala
                180                     185                     190
Ser Gln Lys Asp Cys Ala Ser Gly Thr Phe His Ala Leu
                195                     200                     205
```

<210> 1207
<211> 117
<212> Amino acid
<213> Homo sapiens

<400> 1207
```
Arg Thr Arg Gly Gly Ala Val Ser Phe Glu Asp Phe Ile Lys Gly Leu
 1               5                      10                      15
Ser Ile Leu Leu Arg Gly Thr Val Gln Glu Lys Leu Asn Trp Ala Phe
                20                      25                      30
Asn Leu Tyr Asp Ile Asn Lys Asp Gly Tyr Ile Thr Lys Glu Glu Met
                35                      40                      45
Leu Asp Ile Met Lys Ala Ile Tyr Asp Met Met Gly Lys Cys Thr Tyr
     50                      55                      60
Pro Val Leu Lys Glu Asp Ala Pro Arg Gln His Val Glu Thr Phe Phe
```

```
   65                    70                    75                    80
· Gln Lys Met Asp Lys Asn Lys Asp Gly Val Val Thr Ile Asp Glu Phe
                   85                    90                    95
  Ile Glu Ser Cys Gln Lys Asp Glu Asn Ile Met Arg Ser Met Gln Leu
               100                   105                   110
  Phe Glu Asn Val Ile
               115   117
```

```
        <210> 1208
        <211> 337
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 1208
  Pro Arg Ser Pro Glu His His Thr Pro Ala Trp His Glu Gly Arg Ser
   1               5                    10                    15
  Leu Gly Pro Ile Met Ala Ser Met Ala Asp Arg Asn Met Lys Leu Phe
                   20                    25                    30
  Ser Gly Arg Val Val Pro Ala Gln Gly Glu Glu Thr Phe Glu Asn Trp
               35                    40                    45
  Leu Thr Gln Val Asn Gly Val Leu Pro Asp Trp Asn Met Ser Glu Glu
       50                    55                    60
  Glu Lys Leu Lys Arg Leu Met Lys Thr Leu Arg Gly Pro Ala Arg Glu
   65                    70                    75                    80
  Val Met Arg Val Leu Gln Ala Thr Asn Pro Asn Leu Ser Val Ala Asp
                   85                    90                    95
  Phe Leu Arg Ala Met Lys Leu Val Phe Gly Glu Ser Glu Ser Ser Val
               100                   105                   110
  Thr Ala His Gly Lys Phe Phe Asn Thr Leu Gln Ala Gln Gly Glu Lys
               115                   120                   125
  Ala Ser Leu Tyr Val Ile Arg Leu Glu Val Gln Leu Gln Asn Ala Ile
       130                   135                   140
  Gln Ala Gly Ile Ile Ala Glu Lys Asp Ala Asn Arg Thr Arg Leu Gln
  145                   150                   155                   160
  Gln Leu Leu Leu Gly Gly Glu Leu Ser Arg Asp Leu Arg Leu Arg Leu
                   165                   170                   175
  Lys Asp Phe Leu Arg Met Tyr Ala Asn Glu Gln Glu Arg Leu Pro Asn
               180                   185                   190
  Phe Leu Glu Leu Ile Lys Met Val Arg Glu Glu Glu Asp Trp Asp Asp
               195                   200                   205
  Ala Phe Ile Lys Arg Lys Arg Pro Lys Arg Ser Glu Ser Met Val Glu
       210                   215                   220
  Arg Ala Val Ser Pro Val Ala Phe Gln Gly Ser Pro Pro Ile Val Ile
  225                   230                   235                   240
  Gly Ser Ala Asp Cys Asn Val Ile Glu Ile Asp Asp Thr Leu Asp Asp
                   245                   250                   255
  Ser Asp Glu Asp Val Ile Leu Val Glu Ser Gln Asp Pro Pro Leu Pro
               260                   265                   270
  Ser Trp Gly Ala Pro Pro Leu Arg Asp Arg Ala Arg Pro Gln Asp Glu
               275                   280                   285
  Val Leu Val Ile Asp Ser Pro His Asn Ser Arg Ala Gln Phe Pro Ser
       290                   295                   300 .
  Thr Ser Gly Gly Ser Gly Tyr Lys Asn Asn Gly Pro Gly Glu Met Arg
  305                   310                   315                   320
  Arg Ala Arg Lys Arg Lys His Thr Ile Arg Cys Ser Tyr Cys Gly Glu
                   325                   330                   335
  Glu
  337
```

```
<210> 1209
<211> 64
<212>Amino acid
<213> Homo sapiens




<400> 1209
Ser Val Ala Cys Thr Val Pro Leu Arg Ser Met Ser Asp Pro Asp Gln
1               5                   10                  15
Asp Phe Asp Lys Glu Pro Asp Ser Asp Ser Thr Lys His Ser Thr Pro
            20                  25                  30
Ser Asn Ser Ser Asn Pro Ser Gly Pro Pro Ser Pro Asn Ser Pro His
        35                  40                  45
Arg Ser Gln Leu Pro Leu Glu Gly Leu Glu Gln Pro Ala Cys Asp Thr
    50                  55                  60                  64




<210> 1210
<211> 316
<212>Amino acid
<213> Homo sapiens




<400> 1210
Tyr Ser Ala Val Glu Phe Ala Glu Arg Gly Ser Gly Gly Ser Ser Gly
1               5                   10                  15
Asp Glu Leu Arg Glu Asp Asp Glu Pro Val Lys Lys Arg Gly Arg Lys
            20                  25                  30
Gly Arg Gly Arg Gly Pro Pro Ser Ser Ser Asp Ser Glu Pro Glu Ala
        35                  40                  45
Glu Leu Glu Arg Glu Ala Lys Lys Ser Ala Lys Lys Pro Gln Ser Ser
    50                  55                  60
Ser Thr Glu Pro Ala Arg Lys Pro Gly Gln Lys Glu Lys Arg Val Arg
65                  70                  75                  80
Pro Glu Glu Lys Gln Gln Ala Lys Pro Val Lys Val Glu Arg Thr Arg
                85                  90                  95
Lys Arg Ser Glu Gly Phe Ser Met Asp Arg Lys Val Glu Lys Lys Lys
            100                 105                 110
Glu Pro Ser Val Glu Glu Lys Leu Gln Lys Leu His Ser Glu Ile Lys
        115                 120                 125
Phe Ala Leu Lys Val Asp Ser Pro Asp Val Lys Arg Cys Leu Asn Ala
    130                 135                 140
Leu Glu Glu Leu Gly Thr Leu Gln Val Thr Ser Gln Ile Leu Gln Lys
145                 150                 155                 160
Asn Thr Asp Val Val Ala Thr Leu Lys Lys Ile Arg Arg Tyr Lys Ala
                165                 170                 175
Asn Lys Asp Val Met Glu Lys Ala Ala Glu Val Tyr Thr Arg Leu Lys
            180                 185                 190
Ser Arg Val Leu Gly Pro Lys Ile Glu Ala Val Gln Lys Val Asn Lys
        195                 200                 205
Ala Gly Met Glu Lys Glu Lys Ala Glu Glu Lys Leu Ala Gly Glu Glu
    210                 215                 220
Leu Ala Gly Glu Glu Ala Pro Gln Glu Lys Ala Glu Asp Lys Pro Ser
225                 230                 235                 240
Thr Asp Leu Ser Ala Pro Val Asn Gly Glu Ala Thr Ser Gln Lys Gly
```

722

```
                    245        /      /    250      ,      /       255
Glu Ser Ala Glu Asp Lys Glu His Glu Glu Gly Arg Asp Ser Glu Glu
            260              265                  270
Gly Pro Arg Cys Gly Ser Ser Glu Asp Leu His Asp Ser Val Arg Glu
        275              280                  285
Gly Pro Asp Leu Asp Arg Pro Gly Ser Asp Arg Gln Glu Arg Glu Arg
    290              295                  300
Ala Arg Gly Asp Ser Glu Ala Leu Asp Glu Glu Ser
305              310              315 316
```

```
        <210> 1211
        <211> 767
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1211
Leu Ala Glu Leu Ser Ser Leu Ser Val Leu Arg Leu Ser His Asn Ser
1                5                10                  15
Ile Ser His Ile Ala Glu Gly Ala Phe Lys Gly Leu Arg Ser Leu Arg
            20              25                  30
Val Leu Asp Leu Asp His Asn Glu Ile Ser Gly Thr Ile Glu Asp Thr
        35              40                  45
Ser Gly Ala Phe Ser Gly Leu Asp Ser Leu Ser Lys Leu Thr Leu Phe
    50              55                  60
Gly Asn Lys Ile Lys Ser Val Ala Lys Arg Ala Phe Ser Gly Leu Glu
65                  70                  75                  80
Gly Leu Glu His Leu Asn Leu Gly Gly Asn Ala Ile Arg Ser Val Gln
            85                  90                  95
Phe Asp Ala Phe Val Lys Met Lys Asn Leu Lys Glu Leu His Ile Ser
            100             105                 110
Ser Asp Ser Phe Leu Cys Asp Cys Gln Leu Lys Trp Leu Pro Pro Trp
    115                 120                 125
Leu Ile Gly Arg Met Leu Gln Ala Phe Val Thr Ala Thr Cys Ala His
    130                 135                 140
Pro Glu Ser Leu Lys Gly Gln Ser Ile Phe Ser Val Pro Pro Glu Ser
145                 150                 155                 160
Phe Val Cys Asp Asp Phe Leu Lys Pro Gln Ile Ile Thr Gln Pro Glu
            165                 170                 175
Thr Thr Met Ala Met Val Gly Lys Asp Ile Arg Phe Thr Cys Ser Ala
            180                 185                 190
Ala Ser Ser Ser Ser Ser Pro Met Thr Phe Ala Trp Lys Lys Asp Asn
    195                 200                 205
Glu Val Leu Thr Asn Ala Asp Met Glu Asn Phe Val His Val His Ala
210                 215                 220
Gln Asp Gly Glu Val Met Glu Tyr Thr Thr Ile Leu His Leu Arg Gln
225                 230                 235                 240
Val Thr Phe Gly His Glu Gly Arg Tyr Gln Cys Val Ile Thr Asn His
            245                 250                 255
Phe Gly Ser Thr Tyr Ser His Lys Ala Arg Leu Thr Val Asn Val Leu
            260                 265                 270
Pro Ser Phe Thr Lys Thr Pro His Asp Ile Thr Ile Arg Thr Thr Thr
    275                 280                 285
Met Ala Arg Leu Glu Cys Ala Ala Thr Gly His Pro Asn Pro Gln Ile
    290                 295                 300
Ala Trp Gln Lys Asp Gly Gly Thr Asp Phe Pro Ala Ala Arg Glu Arg
305                 310                 315                 320
Arg Met His Val Met Pro Asp Asp Asp Val Phe Phe Ile Thr Asp Val
            325                 330                 335
Lys Ile Asp Asp Ala Gly Val Tyr Ser Cys Thr Ala Gln Asn Ser Ala
```

723

```
                    340                   345                   350
Gly Ser Ile Ser Ala Asn Ala Thr Leu Thr Val Leu Glu Thr Pro Ser
            355                   360                   365
Leu Val Val Pro Leu Glu Asp Arg Val Val Ser Val Gly Glu Thr Val
        370                   375                   380
Ala Leu Gln Cys Lys Ala Thr Gly Asn Pro Pro Pro Arg Ile Thr Trp
385                   390                   395                   400
Phe Lys Gly Asp Arg Pro Leu Ser Leu Thr Glu Arg His His Leu Thr
                405                   410                   415
Pro Asp Asn Gln Leu Leu Val Val Gln Asn Val Val Ala Glu Asp Ala
            420                   425                   430
Gly Arg Tyr Thr Cys Glu Met Ser Asn Thr Leu Gly Thr Glu Arg Ala
        435                   440                   445
His Ser Gln Leu Ser Val Leu Pro Ala Ala Gly Cys Arg Lys Asp Gly
    450                   455                   460
Thr Thr Val Gly Ile Phe Thr Ile Ala Val Val Ser Ser Ile Val Leu
465                   470                   475                   480
Thr Ser Leu Val Trp Val Cys Ile Ile Tyr Gln Thr Arg Lys Lys Ser
                485                   490                   495
Glu Glu Tyr Ser Val Thr Asn Thr Asp Glu Thr Val Val Pro Pro Asp
            500                   505                   510
Val Pro Ser Tyr Leu Ser Ser Gln Gly Thr Leu Ser Asp Arg Gln Glu
        515                   520                   525
Thr Val Val Arg Thr Glu Gly Gly Pro Gln Ala Asn Gly His Ile Glu
    530                   535                   540
Ser Asn Gly Val Cys Pro Arg Asp Ala Ser His Phe Pro Glu Pro Asp
545                   550                   555                   560
Thr His Ser Val Ala Cys Arg Gln Pro Lys Leu Cys Ala Gly Ser Ala
                565                   570                   575
Tyr His Lys Lys Pro Trp Lys Ala Met Glu Lys Ala Glu Gly Thr Pro
            580                   585                   590
Gly Pro His Lys Met Glu His Gly Gly Arg Val Val Cys Ser Asp Cys
        595                   600                   605
Asn Thr Glu Val Asp Cys Tyr Ser Arg Gly Gln Ala Phe His Pro Gln
    610                   615                   620
Pro Val Ser Arg Asp Ser Ala Gln Pro Ser Ala Pro Asn Gly Pro Glu
625                   630                   635                   640
Pro Gly Gly Ser Asp Gln Glu His Ser Pro His His Gln Cys Ser Arg
                645                   650                   655
Thr Ala Ala Gly Ser Cys Pro Glu Cys Gln Gly Ser Leu Tyr Pro Ser
            660                   665                   670
Asn His Asp Arg Met Leu Thr Ala Val Lys Lys Lys Pro Met Ala Ser
            675                   680                   685
Leu Asp Gly Lys Gly Asp Ser Ser Trp Thr Leu Ala Arg Leu Tyr His
        690                   695                   700
Pro Asp Ser Thr Glu Leu Gln Pro Ala Ser Ser Leu Thr Ser Gly Ser
705                   710                   715                   720
Pro Glu Arg Ala Glu Ala Gln Tyr Leu Leu Val Ser Asn Gly His Leu
                725                   730                   735
Pro Lys Ala Cys Asp Ala Ser Pro Glu Ser Thr Pro Leu Thr Gly Gln
        740                   745                   750
Leu Pro Gly Lys Gln Arg Val Pro Leu Leu Leu Ala Pro Lys Ser
            755                   760                   765   767
```

<210> 1212
<211> 821
<212>Amino acid
<213> Homo sapiens

<400> 1212

```
Ala Ala Ala Gly Ala Ala Arg Arg Val Ser Val Arg Cys Gly Arg Ser
 1               5                   10                  15
Gly Pro Gly Pro Gly Arg Gly Ala Ala Gly Leu Ser Pro Ala Asp Ile
            20                  25                  30
Ala Leu Ala Ser Glu Gln Gly Ala Ser Cys Ser Val Arg Ala Pro Glu
        35                  40                  45
Arg Lys Leu Arg Met Lys Leu Leu Trp Gln Ala Lys Met Ser Ser Ile
    50                  55                  60
Gln Asp Trp Gly Glu Glu Val Glu Glu Gly Ala Val Tyr His Val Thr
65                  70                  75                  80
Leu Lys Arg Val Gln Ile Gln Gln Ala Ala Asn Lys Gly Ala Arg Trp
                85                  90                  95
Leu Gly Val Glu Gly Asp Gln Leu Pro Pro Gly His Thr Val Ser Gln
            100                 105                 110
Tyr Glu Thr Cys Lys Ile Arg Thr Ile Lys Ala Gly Thr Leu Glu Lys
        115                 120                 125
Leu Val Glu Asn Leu Leu Thr Ala Phe Gly Asp Asn Asp Phe Thr Tyr
    130                 135                 140
Ile Ser Ile Phe Leu Ser Thr Tyr Arg Gly Phe Ala Ser Thr Lys Glu
145                 150                 155                 160
Val Leu Glu Leu Leu Leu Asp Arg Tyr Gly Asn Leu Thr Ser Pro Asn
                165                 170                 175
Cys Glu Glu Asp Gly Ser Gln Ser Ser Ser Glu Ser Lys Met Val Ile
            180                 185                 190
Arg Asn Ala Ile Ala Ser Ile Leu Arg Ala Trp Leu Asp Gln Cys Ala
        195                 200                 205
Glu Asp Phe Arg Glu Pro Pro His Phe Pro Cys Leu Gln Lys Leu Leu
    210                 215                 220
Asp Tyr Leu Thr Arg Met Met Pro Gly Ser Asp Pro Glu Arg Arg Ala
225                 230                 235                 240
Gln Asn Leu Leu Glu Gln Phe Gln Lys Gln Glu Val Glu Thr Asp Asn
                245                 250                 255
Gly Leu Pro Asn Thr Ile Ser Phe Ser Leu Glu Glu Glu Glu Glu Leu
            260                 265                 270
Glu Gly Gly Glu Ser Ala Glu Phe Thr Cys Phe Ser Glu Asp Leu Val
        275                 280                 285
Ala Glu Gln Leu Thr Tyr Met Asp Ala Gln Leu Phe Lys Lys Val Val
    290                 295                 300
Pro His His Cys Leu Gly Cys Ile Trp Ser Arg Arg Asp Lys Lys Glu
305                 310                 315                 320
Asn Lys His Leu Ala Pro Thr Ile Arg Ala Thr Ile Ser Gln Phe Asn
                325                 330                 335
Thr Leu Thr Lys Cys Val Val Ser Thr Ile Leu Gly Gly Lys Glu Leu
            340                 345                 350
Lys Thr Gln Gln Arg Ala Lys Ile Ile Glu Lys Trp Ile Asn Ile Ala
        355                 360                 365
His Glu Cys Arg Leu Leu Lys Asn Phe Ser Ser Leu Arg Ala Ile Val
    370                 375                 380
Ser Ala Leu Gln Ser Asn Ser Ile Tyr Arg Leu Lys Lys Thr Trp Ala
385                 390                 395                 400
Ala Val Pro Arg Asp Arg Met Leu Met Phe Glu Glu Leu Ser Asp Ile
                405                 410                 415
Phe Ser Asp His Asn Asn His Leu Thr Ser Arg Glu Leu Leu Met Lys
            420                 425                 430
Glu Gly Thr Ser Lys Phe Ala Asn Leu Asp Ser Ser Val Lys Glu Asn
        435                 440                 445
Gln Lys Arg Thr Gln Arg Arg Leu Gln Leu Gln Lys Asp Met Gly Val
    450                 455                 460
Met Gln Gly Thr Val Pro Tyr Leu Gly Thr Phe Leu Thr Asp Leu Thr
465                 470                 475                 480
Met Leu Asp Thr Ala Leu Gln Asp Tyr Ile Glu Gly Gly Leu Ile Asn
                485                 490                 495
Phe Glu Lys Arg Arg Arg Glu Phe Glu Val Ile Ala Gln Ile Lys Leu
```

```
                    500                         505                     510
      Leu Gln Ser Ala Cys Asn Ser Tyr Cys Met Thr Pro Asp Gln Lys Phe
              515                     520                     525
      Ile Gln Trp Phe Gln Arg Gln Gln Leu Leu Thr Glu Glu Glu Ser Tyr
              530                     535                     540
      Ala Leu Ser Cys Glu Ile Glu Ala Ala Ala Asp Ala Ser Thr Thr Ser
      545                     550                     555                 560
      Pro Lys Pro Trp Lys Ser Met Val Lys Arg Leu Asn Leu Leu Phe Leu
                      565                     570                     575
      Gly Ala Asp Met Ile Thr Ser Pro Thr Pro Thr Lys Glu Gln Pro Lys
                  580                     585                     590
      Ser Thr Ala Ser Gly Ser Ser Gly Glu Ser Met Asp Ser Val Ser Val
              595                     600                     605
      Ser Ser Cys Glu Ser Asn His Ser Glu Ala Glu Glu Gly Tyr Ile Thr
              610                     615                     620
      Pro Met Asp Thr Pro Asp Glu Pro Gln Lys Lys Leu Ser Glu Ser Ser
      625                     630                     635                 640
      Ser Tyr Cys Ser Ser Ile His Ser Met Asp Thr Asn Phe Leu Gln Gly
                      645                     650                     655
      Met Ser Ser Leu Ile Asn Pro Leu Ser Ser Pro Pro Ser Cys Asn Asn
                  660                     665                     670
      Asn Pro Lys Ile His Lys Arg Ser Val Ser Val Thr Ser Ile Thr Ser
              675                     680                     685
      Thr Val Leu Pro Pro Val Tyr Asn Gln Gln Asn Glu Asp Thr Cys Ile
              690                     695                     700
      Ile Arg Ile Ser Val Glu Asp Asn Asn Gly Asn Met Tyr Lys Ser Ile
      705                     710                     715                 720
      Met Leu Thr Ser Gln Asp Lys Thr Pro Ala Val Ile Gln Arg Ala Met
                      725                     730                     735
      Leu Lys His Asn Leu Asp Ser Asp Pro Ala Glu Glu Tyr Glu Leu Val
                  740                     745                     750
      Gln Val Ile Ser Glu Asp Lys Glu Leu Val Ile Pro Asp Ser Ala Asn
              755                     760                     765
      Val Phe Tyr Ala Met Asn Ser Gln Val Asn Phe Asp Phe Ile Leu Arg
              770                     775                     780
      Lys Lys Asn Ser Met Glu Glu Gln Val Lys Leu Arg Ser Arg Thr Ser
      785                     790                     795                 800
      Leu Thr Leu Pro Arg Thr Ala Lys Arg Gly Cys Trp Ser Asn Arg His
                      805                     810                     815
      Ser Lys Ile Thr Leu
              820 821


          <210> 1213
          <211> 289
          <212> Amino acid
          <213> Homo sapiens




          <400> 1213
      Ala Arg Glu Lys Met Asp Ser Cys Ile Glu Ala Phe Gly Thr Thr Lys
      1                       5                       10                  15
      Gln Lys Arg Ala Leu Asn Thr Arg Arg Met Asn Arg Val Gly Asn Glu
                  20                      25                      30
      Ser Leu Asn Arg Ala Val Ala Lys Ala Ala Glu Thr Ile Ile Asp Thr
              35                      40                      45
      Lys Gly Val Thr Ala Leu Val Ser Asp Ala Ile His Asn Asp Leu Gln
          50                      55                      60
      Asp Asp Ser Leu Tyr Leu Pro Pro Cys Tyr Asp Asp Ala Ala Lys Pro
      65                      70                      75                  80
      Glu Asp Val Tyr Lys Phe Glu Asp Leu Leu Ser Pro Ala Glu Tyr Glu
```

```
                        85                    90                    95
Ala Leu Gln Ser Pro Ser Glu Ala Phe Arg Asn Val Thr Ser Glu Glu
                100                   105                   110
Ile Leu Lys Met Ile Glu Glu Asn Ser His Cys Thr Phe Val Ile Glu
        115                   120                   125
Ala Leu Lys Ser Leu Pro Ser Asp Val Glu Ser Arg Asp Arg Gln Ala
        130                   135                   140
Arg Cys Ile Trp Phe Leu Asp Thr Leu Ile Lys Phe Arg Ala His Arg
145                   150                   155                   160
Val Val Lys Arg Lys Ser Ala Leu Gly Pro Gly Val Pro His Ile Ile
                165                   170                   175
Asn Thr Lys Leu Leu Lys His Phe Thr Cys Leu Thr Tyr Asn Asn Gly
            180                   185                   190
Arg Leu Arg Asn Leu Ile Ser Asp Ser Met Lys Ala Lys Ile Thr Ala
            195                   200                   205
Tyr Val Ile Ile Leu Ala Leu His Ile His Asp Phe Gln Ile Asp Leu
        210                   215                   220
Thr Val Leu Gln Arg Asp Leu Lys Leu Ser Glu Lys Arg Met Met Glu
225                   230                   235                   240
Ile Ala Lys Ala Met Arg Leu Lys Ile Ser Lys Arg Arg Val Ser Val
                245                   250                   255
Ala Ala Gly Ser Glu Glu Asp His Lys Leu Gly Thr Leu Ser Leu Pro
            260                   265                   270
Leu Pro Pro Ala Gln Thr Ser Asp Arg Leu Ala Lys Arg Arg Lys Ile
        275                   280                   285
Thr
289


        <210> 1214
        <211> 873
        <212>Amino acid
        <213> Homo sapiens



        <400> 1214
Leu Ser Leu Phe Gly Ser Arg Ala Leu Gly Arg Ser Gly Ala Arg Ala
  1             5                    10                    15
Met Ala Lys Ala Lys Lys Val Gly Ala Arg Arg Lys Ala Ser Gly Ala
            20                    25                    30
Pro Ala Gly Ala Arg Gly Gly Pro Ala Lys Ala Asn Ser Asn Pro Phe
        35                    40                    45
Glu Val Lys Val Asn Arg Gln Lys Phe Gln Ile Leu Gly Arg Lys Thr
    50                    55                    60
Arg His Asp Val Gly Leu Pro Gly Val Ser Arg Ala Arg Ala Leu Arg
65                    70                    75                    80
Lys Arg Thr Gln Thr Leu Leu Lys Glu Tyr Lys Glu Arg Asp Lys Ser
                85                    90                    95
Asn Val Phe Arg Asp Lys Arg Phe Gly Glu Tyr Asn Ser Asn Met Ser
                100                   105                   110
Pro Glu Glu Lys Met Met Lys Arg Phe Ala Leu Glu Gln Gln Arg His
        115                   120                   125
His Glu Lys Lys Ser Ile Tyr Asn Leu Asn Glu Asp Glu Glu Leu Thr
        130                   135                   140
His Tyr Gly Gln Ser Leu Ala Asp Ile Glu Lys His Asn Asp Ile Val
145                   150                   155                   160
Asp Ser Asp Ser Asp Ala Glu Asp Arg Gly Thr Leu Ser Gly Glu Leu
                165                   170                   175
Thr Ala Ala His Phe Gly Gly Gly Gly Leu Leu His Lys Lys Thr
            180                   185                   190
Gln Gln Glu Gly Glu Glu Arg Glu Lys Pro Lys Ser Arg Lys Glu Leu
```

```
              195                    200                    205
Ile Glu Glu Leu Ile Ala Lys Ser Lys Gln Glu Lys Arg Glu Arg Gln
    210                    215                    220
Ala Gln Arg Glu Asp Ala Leu Glu Leu Thr Glu Lys Leu Asp Gln Asp
225                    230                    235                    240
Trp Lys Glu Ile Gln Thr Leu Leu Ser His Lys Thr Pro Lys Ser Glu
                   245                    250                    255
Asn Arg Asp Lys Lys Glu Lys Pro Lys Pro Asp Ala Tyr Asp Met Met
               260                    265                    270
Val Arg Glu Leu Gly Phe Glu Met Lys Ala Gln Pro Ser Asn Arg Met
           275                    280                    285
Lys Thr Glu Ala Glu Leu Ala Lys Glu Glu Gln Glu His Leu Arg Lys
       290                    295                    300
Leu Glu Ala Glu Arg Leu Arg Arg Met Leu Gly Lys Asp Glu Asp Glu
305                    310                    315                    320
Asn Val Lys Lys Pro Lys His Met Ser Ala Asp Asp Leu Asn Asp Gly
                   325                    330                    335
Phe Val Leu Asp Lys Asp Asp Arg Arg Leu Leu Ser Tyr Lys Asp Gly
               340                    345                    350
Lys Met Asn Val Glu Glu Asp Val Gln Glu Glu Gln Ser Lys Glu Ala
           355                    360                    365
Ser Asp Pro Glu Ser Asn Glu Glu Glu Gly Asp Ser Ser Gly Gly Glu
       370                    375                    380
Asp Thr Glu Glu Ser Asp Ser Pro Asp Ser His Leu Asp Leu Glu Ser
385                    390                    395                    400
Asn Val Glu Ser Glu Glu Glu Asn Glu Lys Pro Ala Lys Glu Gln Arg
                   405                    410                    415
Gln Thr Pro Gly Lys Gly Leu Ile Ser Gly Lys Glu Arg Ala Gly Lys
               420                    425                    430
Ala Thr Arg Asp Glu Leu Pro Tyr Thr Phe Ala Ala Pro Glu Ser Tyr
           435                    440                    445
Glu Glu Leu Arg Ser Leu Leu Leu Gly Arg Ser Met Glu Glu Gln Leu
       450                    455                    460
Leu Val Val Glu Arg Ile Gln Lys Cys Asn His Pro Ser Leu Ala Glu
465                    470                    475                    480
Gly Asn Lys Ala Lys Leu Glu Lys Leu Phe Gly Phe Leu Leu Glu Tyr
                   485                    490                    495
Val Gly Asp Leu Ala Thr Asp Asp Pro Pro Asp Leu Thr Val Ile Asp
               500                    505                    510
Lys Leu Val Val His Leu Tyr His Leu Cys Gln Met Phe Pro Glu Ser
           515                    520                    525
Ala Ser Asp Ala Ile Lys Phe Val Leu Arg Asp Ala Met His Glu Met
       530                    535                    540
Glu Glu Met Ile Glu Thr Lys Gly Arg Ala Ala Leu Pro Gly Leu Asp
545                    550                    555                    560
Val Leu Ile Tyr Leu Lys Ile Thr Gly Leu Leu Phe Pro Thr Ser Asp
                   565                    570                    575
Phe Trp His Pro Val Val Thr Pro Ala Leu Val Cys Leu Ser Gln Leu
               580                    585                    590
Leu Thr Lys Cys Pro Ile Leu Ser Leu Gln Asp Val Val Lys Gly Leu
           595                    600                    605
Phe Val Cys Cys Leu Phe Leu Glu Tyr Val Ala Leu Ser Gln Arg Phe
       610                    615                    620
Ile Pro Glu Leu Ile Asn Phe Leu Leu Gly Ile Leu Tyr Ile Ala Thr
625                    630                    635                    640
Pro Asn Lys Ala Ser Gln Gly Ser Thr Leu Val His Pro Phe Arg Ala
                   645                    650                    655
Leu Gly Lys Asn Ser Glu Leu Leu Val Val Ser Ala Arg Glu Asp Val
               660                    665                    670
Ala Thr Trp Gln Gln Ser Ser Leu Ser Leu Arg Trp Ala Ser Arg Leu
           675                    680                    685
Arg Ala Pro Thr Ser Thr Glu Ala Asn His Ile Arg Leu Ser Cys Leu
       690                    695                    700
Ala Val Gly Leu Ala Leu Leu Lys Arg Cys Val Leu Met Tyr Gly Ser
```

```
705                      710                      715                      720
Leu Pro Ser Phe His Ala Ile Met Gly Pro Leu Arg Ala Leu Leu Thr
                    725                      730                      735
Asp His Leu Ala Asp Cys Ser His Pro Gln Glu Leu Gln Glu Leu Cys
                740                      745                      750
Gln Ser Thr Leu Thr Glu Met Glu Ser Gln Lys Gln Leu Cys Arg Pro
            755                      760                      765
Leu Thr Cys Glu Lys Ser Lys Pro Val Pro Leu Lys Leu Phe Thr Pro
    770                      775                      780
Arg Leu Val Lys Val Leu Glu Phe Gly Arg Lys Gln Gly Ser Ser Lys
785                      790                      795                      800
Glu Glu Gln Glu Arg Lys Arg Leu Ile His Lys His Lys Arg Glu Phe
                805                      810                      815
Lys Gly Ala Val Arg Glu Ile Arg Lys Asp Asn Gln Phe Leu Ala Arg
            820                      825                      830
Met Gln Leu Ser Glu Ile Met Glu Arg Asp Ala Glu Arg Lys Arg Lys
        835                      840                      845
Val Lys Gln Leu Phe Asn Ser Leu Ala Thr Gln Glu Gly Glu Trp Lys
    850                      855                      860
Ala Leu Lys Arg Lys Lys Phe Lys Lys
865                      870      873
```

```
<210> 1215
<211> 319
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1215
Leu Thr Lys Gln Glu Asp Cys Cys Gly Ser Ile Gly Thr Ala Trp Gly
    1                   5                  10                  15
Gln Ser Lys Cys His Lys Cys Pro Gln Leu Gln Tyr Thr Gly Val Gln
                20                  25                  30
Lys Pro Gly Pro Val Arg Gly Glu Val Gly Ala Asp Cys Pro Gln Gly
            35                  40                  45
Tyr Lys Arg Leu Asn Ser Thr His Cys Gln Asp Ile Asn Glu Cys Ala
        50                  55                  60
Met Pro Gly Val Cys Arg His Gly Asp Cys Leu Asn Asn Pro Gly Ser
65                  70                  75                  80
Tyr Arg Cys Val Cys Pro Pro Gly His Ser Leu Gly Pro Ser Arg Thr
                85                  90                  95
Gln Cys Ile Ala Asp Lys Pro Glu Glu Lys Ser Leu Cys Phe Arg Leu
            100                 105                 110
Val Ser Pro Glu His Gln Cys Gln His Pro Leu Thr Thr Arg Leu Thr
        115                 120                 125
Arg Gln Leu Cys Cys Cys Ser Val Gly Lys Ala Trp Gly Ala Arg Cys
    130                 135                 140
Gln Arg Cys Pro Thr Asp Gly Thr Ala Ala Phe Lys Glu Ile Cys Pro
145                 150                 155                 160
Ala Gly Lys Gly Tyr His Ile Leu Thr Ser His Gln Thr Leu Thr Ile
                165                 170                 175
Gln Gly Glu Ser Asp Phe Ser Leu Phe Leu His Pro Asp Gly Pro Pro
            180                 185                 190
Lys Pro Gln Gln Leu Pro Glu Ser Pro Ser Gln Ala Pro Pro Pro Glu
        195                 200                 205
Asp Thr Glu Glu Glu Arg Gly Val Thr Thr Asp Ser Pro Val Ser Glu
    210                 215                 220
Glu Arg Ser Val Gln Gln Ser His Pro Thr Ala Thr Thr Thr Pro Ala
225                 230                 235                 240
Arg Pro Tyr Pro Glu Leu Ile Ser Arg Pro Ser Pro Pro Thr Met Arg
```

```
                      245                    250                    255
Trp Phe Leu Pro Asp Leu Pro Pro Ser Arg Ser Ala Val Glu Ile Ala
              ·260                    265                    270
Pro Thr Gln Val Thr Glu Thr Asp Glu Cys Arg Leu Asn Gln Asn Ile
          275                    280                    285
Cys Gly His Gly Glu Cys Val Pro Gly Pro Pro Asp Tyr Ser Cys His
          290                    295                    300
Cys Asn Pro Gly Tyr Arg Ser His Pro Gln His Arg Tyr Cys Val
305                    310                    315                319
```

```
          <210> 1216
          <211> 815
          <212> Amino acid
          <213> Homo sapiens
```

```
          <400> 1216
Met Ala Gly Gly His Cys Gly Ser Phe Pro Ala Ala Ala Ala Gly Ser
  1                   5                    10                   15
Gly Glu Ile Val Gln Leu Asn Val Gly Gly Thr Arg Phe Ser Thr Ser
              20                   25                   30
Arg Gln Thr Leu Met Trp Ile Pro Asp Ser Phe Phe Ser Ser Leu Leu
          35                   40                   45
Ser Gly Arg Ile Ser Thr Leu Arg Asp Glu Thr Gly Ala Ile Phe Ile
      50                   55                   60
Asp Arg Asp Pro Ala Ala Phe Ala Pro Ile Leu Asn Phe Leu Arg Thr
65                   70                   75                   80
Lys Glu Leu Asp Leu Arg Gly Val Ser Ile Asn Val Leu Arg His Glu
              85                   90                   95
Ala Glu Phe Tyr Gly Ile Thr Pro Leu Val Arg Arg Leu Leu Leu Cys
              100                  105                  110
Glu Glu Leu Glu Arg Ser Ser Cys Gly Ser Val Leu Phe His Gly Tyr
          115                  120                  125
Leu Pro Pro Pro Gly Ile Pro Ser Arg Lys Ile Asn Asn Thr Val Arg
          130                  135                  140
Ser Ala Asp Ser Arg Asn Gly Leu Asn Ser Thr Glu Gly Glu Ala Arg
145                  150                  155                  160
Gly Asn Gly Thr Gln Pro Val Leu Ser Gly Thr Gly Glu Glu Thr Val
              165                  170                  175
Arg Leu Gly Phe Pro Val Asp Pro Arg Lys Val Leu Ile Val Ala Gly
          180                  185                  190
His His Asn Trp Ile Val Ala Ala Tyr Ala His Phe Ala Val Trp Tyr
          195                  200                  205
Arg Ile Lys Glu Ser Ser Gly Trp Gln Gln Val Phe Thr Ser Pro Tyr
      210                  215                  220
Leu Asp Trp Thr Ile Glu Arg Val Ala Leu Asn Ala Lys Val Val Gly
225                  230                  235                  240
Gly Pro His Gly Asp Lys Asp Lys Met Val Ala Val Ala Ser Glu Ser
              245                  250                  255
Ser Ile Ile Leu Trp Ser Val Gln Asp Gly Gly Ser Gly Ser Glu Ile
              260                  265                  270
Gly Val Phe Ser Leu Gly Val Pro Val Asp Ala Leu Phe Phe Ile Gly
          275                  280                  285
Asn Gln Leu Val Ala Thr Ser His Thr Gly Lys Val Gly Val Trp Asn
          290                  295                  300
Ala Val Thr Gln His Trp Gln Val Gln Asp Val Val Pro Ile Thr Ser
305                  310                  315                  320
Tyr Asp Thr Ala Gly Ser Phe Leu Leu Leu Gly Cys Asn Asn Gly Ser
              325                  330                  335
Ile Tyr Tyr Ile Asp Met Gln Lys Phe Pro Leu Arg Met Lys Asp Asn
```

```
                340                    345                    350
Asp Leu Leu Val Thr Glu Leu Tyr His Asp Pro Ser Asn Asp Ala Ile
         355                    360                    365
Thr Ala Leu Ser Val Tyr Leu Thr Pro Lys Thr Ser Val Ser Gly Asn
         370                    375                    380
Trp Ile Glu Ile Ala Tyr Gly Thr Ser Ser Gly Ala Val Arg Val Ile
385                    390                    395                    400
Val Gln His Pro Glu Thr Val Gly Ser Gly Pro Gln Leu Phe Gln Thr
             405                    410                    415
Phe Thr Val His Arg Ser Pro Val Thr Lys Ile Met Leu Ser Glu Lys
         420                    425                    430
His Leu Val Ser Val Cys Ala Asp Asn Asn His Val Arg Thr Trp Thr
         435                    440                    445
Val Thr Arg Phe Arg Gly Met Ile Ser Thr Gln Pro Gly Ser Thr Pro
         450                    455                    460
Leu Ala Ser Phe Lys Ile Leu Ser Leu Glu Glu Thr Glu Ser His Gly
465                    470                    475                    480
Ser Tyr Ser Ser Gly Asn Asp Ile Gly Pro Phe Gly Glu Arg Asp Asp
             485                    490                    495
Gln Gln Val Phe Ile Gln Lys Val Val Pro Ile Thr Asn Lys Leu Phe
         500                    505                    510
Val Arg Leu Ser Ser Thr Gly Lys Arg Ile Cys Glu Ile Gln Ala Val
         515                    520                    525
Asp Cys Thr Thr Ile Ser Ser Phe Thr Gly Arg Glu Cys Glu Gly Ser
530                    535                    540
Ser Arg Met Gly Ser Arg Pro Arg Arg Tyr Leu Phe Thr Gly His Thr
545                    550                    555                    560
Asn Gly Ser Ile Gln Met Trp Asp Leu Thr Thr Ala Met Asp Met Val
             565                    570                    575
Asn Lys Ser Glu Asp Lys Asp Val Gly Gly Pro Thr Glu Glu Glu Leu
         580                    585                    590
Leu Lys Leu Leu Asp Gln Cys Asp Leu Ser Thr Ser Arg Cys Ala Thr
         595                    600                    605
Pro Asn Ile Ser Pro Ala Thr Ser Val Val Gln His Ser His Leu Arg
         610                    615                    620
Glu Ser Asn Ser Ser Leu Gln Leu Gln His His Asp Thr Thr His Glu
625                    630                    635                    640
Ala Ala Thr Tyr Gly Ser Met Arg Pro Tyr Arg Glu Ser Pro Leu Leu
             645                    650                    655
Ala Arg Ala Arg Arg Thr Glu Ser Phe His Ser Tyr Arg Asp Phe Gln
         660                    665                    670
Thr Ile Asn Leu Asn Arg Asn Val Glu Arg Ala Val Pro Glu Asn Gly
         675                    680                    685
Asn Leu Gly Pro Ile Gln Ala Glu Val Lys Gly Ala Thr Gly Glu Cys
         690                    695                    700
Asn Ile Ser Glu Arg Lys Ser Pro Gly Val Glu Ile Lys Ser Leu Arg
705                    710                    715                    720
Glu Leu Asp Ser Gly Leu Glu Val His Lys Ile Ala Glu Gly Phe Ser
             725                    730                    735
Glu Ser Lys Lys Arg Ser Ser Glu Asp Glu Asn Glu Asn Lys Ile Glu
         740                    745                    750
Phe Arg Lys Lys Gly Gly Phe Glu Gly Gly Gly Phe Leu Gly Arg Lys
         755                    760                    765
Lys Val Pro Tyr Leu Ala Ser Ser Pro Ser Thr Ser Asp Gly Gly Thr
         770                    775                    780
Asp Ser Pro Gly Thr Ala Ser Pro Ser Pro Thr Lys Thr Thr Pro Ser
785                    790                    795                    800
Pro Arg His Lys Lys Ser Asp Ser Ser Gly Gln Glu Tyr Ser Leu
             805                    810                    815
```

<210> 1217
<211> 459
<212>Amino acid

<213> Homo sapiens

<400> 1217

Arg	Arg	Pro	Thr	Arg	Pro	Ile	Leu	Thr	Asp	Glu	Leu	Phe	Lys	Arg	Thr
1				5					10					15	

```
Arg Arg Pro Thr Arg Pro Ile Leu Thr Asp Glu Leu Phe Lys Arg Thr
1               5                   10                  15
Ile Gln Leu Pro His Leu Lys Thr Leu Ile Leu Asn Gly Asn Lys Leu
            20                  25                  30
Glu Thr Leu Ser Leu Val Ser Cys Phe Ala Asn Asn Thr Pro Leu Glu
        35                  40                  45
His Leu Asp Leu Ser Gln Asn Leu Leu Gln His Lys Asn Asp Glu Asn
    50                  55                  60
Cys Ser Trp Pro Glu Thr Val Val Asn Met Asn Leu Ser Tyr Asn Lys
65              70                  75                  80
Leu Ser Asp Ser Val Phe Arg Cys Leu Pro Lys Ser Ile Gln Ile Leu
            85                  90                  95
Asp Leu Asn Asn Asn Gln Ile Gln Thr Val Pro Lys Glu Thr Ile His
            100                 105                 110
Leu Met Ala Leu Arg Glu Leu Asn Ile Ala Phe Asn Phe Leu Thr Asp
    115                 120                 125
Leu Pro Gly Cys Ser His Phe Ser Arg Leu Ser Val Leu Asn Ile Glu
    130                 135                 140
Met Asn Phe Ile Leu Ser Pro Ser Leu Asp Phe Val Gln Ser Cys Gln
145                 150                 155                 160
Glu Val Lys Thr Leu Asn Ala Gly Arg Asn Pro Phe Arg Cys Thr Cys
            165                 170                 175
Glu Leu Lys Asn Phe Ile Gln Leu Glu Thr Tyr Ser Glu Val Met Met
            180                 185                 190
Val Gly Trp Ser Asp Ser Tyr Thr Cys Glu Tyr Pro Leu Asn Leu Arg
    195                 200                 205
Gly Thr Arg Leu Lys Asp Val His Leu His Glu Leu Ser Cys Asn Thr
    210                 215                 220
Ala Leu Leu Ile Val Thr Ile Val Val Ile Met Leu Val Leu Gly Leu
225                 230                 235                 240
Ala Val Ala Phe Cys Cys Leu His Phe Asp Leu Pro Trp Tyr Leu Arg
            245                 250                 255
Met Leu Gly Gln Cys Thr Gln Thr Trp His Arg Val Arg Lys Thr Thr
    260                 265                 270
Gln Glu Gln Leu Lys Arg Asn Val Arg Phe His Ala Phe Ile Ser Tyr
    275                 280                 285
Ser Glu His Asp Ser Leu Trp Val Lys Asn Glu Leu Ile Pro Asn Leu
    290                 295                 300
Glu Lys Glu Asp Gly Ser Ile Leu Ile Cys Leu Tyr Glu Ser Tyr Phe
305                 310                 315                 320
Asp Pro Gly Lys Ser Ile Ser Glu Asn Ile Val Ser Phe Ile Glu Lys
            325                 330                 335
Ser Tyr Lys Ser Ile Phe Val Leu Ser Pro Asn Phe Val Gln Asn Glu
    340                 345                 350
Trp Cys His Tyr Glu Phe Tyr Phe Ala His His Asn Leu Phe His Glu
    355                 360                 365
Asn Ser Asp His Ile Ile Leu Ile Leu Leu Glu Pro Ile Pro Phe Tyr
370                 375                 380
Cys Ile Pro Thr Arg Tyr His Lys Leu Lys Ala Leu Leu Glu Lys Lys
385                 390                 395                 400
Ala Tyr Leu Glu Trp Pro Lys Asp Arg Arg Lys Cys Gly Leu Phe Trp
            405                 410                 415
Ala Asn Leu Arg Ala Ala Ile Asn Val Asn Val Leu Ala Thr Arg Glu
            420                 425                 430
Met Tyr Glu Leu Gln Thr Phe Thr Glu Leu Asn Glu Glu Ser Arg Gly
    435                 440                 445
Ser Thr Ile Ser Leu Met Arg Thr Asp Cys Leu
```

```
            450                    455              459
```

```
   <210> 1218
   <211> 366
   <212> Amino acid
   <213> Homo sapiens
```

```
      <400> 1218
Pro Thr Arg Pro Pro Thr Arg Pro Pro Thr Arg Pro Leu Leu Thr Pro
 1               5                  10                  15
Ser Trp Thr Ser Thr Gly Arg Met Trp Ser His Leu Asn Arg Leu Leu
            20                  25                  30
Phe Trp Ser Ile Phe Ser Ser Val Thr Cys Arg Lys Ala Val Leu Asp
        35                  40                  45
Cys Glu Ala Met Lys Thr Asn Glu Phe Pro Ser Pro Cys Leu Asp Ser
    50                  55                  60
Lys Thr Lys Val Val Met Lys Gly Gln Asn Val Ser Met Phe Cys Ser
65              70                  75                  80
His Lys Asn Lys Ser Leu Gln Ile Thr Tyr Ser Leu Phe Arg Arg Lys
                85                  90                  95
Thr His Leu Gly Thr Gln Asp Gly Lys Gly Glu Pro Ala Ile Phe Asn
            100                 105                 110
Leu Ser Ile Thr Glu Ala His Glu Ser Gly Pro Tyr Lys Cys Lys Ala
        115                 120                 125
Gln Val Thr Ser Cys Ser Lys Tyr Ser Arg Asp Phe Ser Phe Thr Ile
    130                 135                 140
Val Asp Pro Val Thr Ser Pro Val Leu Asn Ile Met Val Ile Gln Thr
145             150                 155                 160
Glu Thr Asp Arg His Ile Thr Leu His Cys Leu Ser Val Asn Gly Ser
                165                 170                 175
Leu Pro Ile Asn Tyr Thr Phe Phe Glu Asn His Val Ala Ile Ser Pro
            180                 185                 190
Ala Ile Ser Lys Tyr Asp Arg Glu Pro Ala Glu Phe Asn Leu Thr Lys
        195                 200                 205
Lys Asn Pro Gly Glu Glu Glu Tyr Arg Cys Glu Ala Lys Asn Arg
    210                 215                 220
Leu Pro Asn Tyr Ala Thr Tyr Ser His Pro Val Thr Met Pro Ser Thr
225             230                 235                 240
Gly Gly Asp Ser Cys Pro Phe Cys Leu Lys Leu Leu Leu Pro Gly Leu
            245                 250                 255
Leu Leu Leu Leu Val Val Ile Ile Leu Ile Leu Ala Phe Trp Val Leu
            260                 265                 270
Pro Lys Tyr Lys Thr Arg Lys Ala Met Arg Asn Asn Val Pro Arg Asp
    275                 280                 285
Arg Gly Asp Thr Ala Met Glu Val Gly Ile Tyr Ala Asn Ile Leu Glu
    290                 295                 300
Lys Gln Ala Lys Glu Glu Ser Val Pro Glu Val Gly Ser Arg Pro Cys
305                 310                 315                 320
Val Ser Thr Ala Gln Asp Glu Ala Lys His Ser Gln Glu Leu Gln Tyr
                325                 330                 335
Ala Thr Pro Val Phe Gln Glu Val Ala Pro Arg Glu Gln Glu Ala Cys
            340                 345                 350
Asp Ser Tyr Lys Ser Gly Tyr Val Tyr Ser Glu Leu Asn Phe
            355                 360                 365 366
```

```
   <210> 1219
   <211> 97
   <212> Amino acid
```

<213> Homo sapiens

<400> 1219
```
Phe Phe Phe Phe Glu Glu Arg Arg Thr Gly Ser His Ser Val Gly His
1               5                   10                  15
Pro Arg Met Glu Tyr Ser Gly Val Ser Met Ala His Cys Ser Leu Asn
            20                  25                  30
Leu Leu Gly Ser Ser Asn Ser Pro Ser Ser Ala Ser Gln Asp Ala Arg
        35                  40                  45
Thr Thr Gly Ala Cys Gln His Ala Gln Leu Ile Gly Phe Phe Phe Phe
    50                  55                  60
Val Glu Thr Ala Ser Pro Gln Val Thr His Ala Gly Leu Lys His Leu
65                  70                  75                  80
Val Ser Arg Asn Pro Ser Ala Val Thr Ser Gln Ser Ala Arg Ile Lys
                85                  90                  95
Thr
97
```


<210> 1220
<211> 242
<212>Amino acid
<213> Homo sapiens

<400> 1220
```
Asn Arg Glu Gly Ala Arg Lys Ile Gln Asn Lys Trp Leu Arg Pro Ser
1               5                   10                  15
Pro Arg Ser His Arg Thr Pro Glu Ser Val Ser Pro Glu Arg Tyr Ser
            20                  25                  30
Tyr Gly Thr Ser Ser Ser Ser Lys Arg Thr Glu Gly Ser Cys Arg Arg
        35                  40                  45
Arg Arg Gln Ser Ser Ser Ser Ala Asn Ser Gln Gln Gly Gln Trp Glu
    50                  55                  60
Thr Gly Ser Pro Pro Thr Lys Arg Gln Arg Arg Ser Arg Gly Arg Pro
65                  70                  75                  80
Ser Gly Gly Ala Lys Arg Arg Arg Gly Ala Pro Ala Ala Pro Gln
                85                  90                  95
Gln Gln Ser Glu Pro Ala Arg Pro Ser Ser Glu Gly Lys Val Thr Cys
            100                 105                 110
Asp Ile Arg Leu Arg Val Arg Ala Glu Tyr Cys Glu His Gly Pro Ala
        115                 120                 125
Leu Glu Gln Gly Val Ala Ser Arg Arg Pro Gln Ala Leu Ala Arg Gln
    130                 135                 140
Leu Asp Val Phe Gly Gln Ala Thr Ala Val Leu Arg Ser Arg Asp Leu
145                 150                 155                 160
Gly Ser Val Val Cys Asp Ile Lys Phe Ser Glu Leu Ser Tyr Leu Asp
                165                 170                 175
Ala Phe Trp Gly Asp Tyr Leu Ser Gly Ala Leu Leu Gln Ala Leu Arg
            180                 185                 190
Gly Val Phe Leu Thr Glu Ala Leu Arg Glu Ala Val Gly Arg Glu Ala
            195                 200                 205
Val Arg Leu Leu Val Ser Val Asp Glu Ala Asp Tyr Glu Ala Gly Arg
    210                 215                 220
Arg Arg Leu Leu Leu Met Glu Glu Glu Gly Gly Arg Arg Pro Thr Glu
225                 230                 235                 240
Ala Ser
```

242

```
<210> 1221
<211> 440
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1221
Ala Pro Asn Thr Ala Glu Leu Arg Ile Cys Arg Val Asn Lys Asn Cys
1               5                   10                  15
Gly Ser Val Arg Gly Gly Asp Glu Ile Phe Leu Leu Cys Asp Lys Val
            20                  25                  30
Gln Lys Asp Asp Ile Glu Val Arg Phe Val Leu Asn Asp Trp Glu Ala
        35                  40                  45
Lys Gly Ile Phe Ser Gln Ala Asp Val His Arg Gln Val Ala Ile Val
    50                  55                  60
Phe Lys Thr Pro Pro Tyr Cys Lys Ala Ile Thr Glu Pro Val Thr Val
65                  70                  75                  80
Lys Met Gln Leu Arg Arg Pro Ser Asp Gln Glu Val Ser Glu Ser Met
            85                  90                  95
Asp Phe Arg Tyr Leu Pro Asp Glu Lys Asp Thr Tyr Gly Asn Lys Ala
            100                 105                 110
Lys Lys Gln Lys Thr Thr Leu Leu Phe Gln Lys Leu Cys Gln Asp His
        115                 120                 125
Val Glu Thr Gly Phe Arg His Val Asp Gln Asp Gly Leu Glu Leu Leu
    130                 135                 140
Thr Ser Gly Asp Pro Pro Thr Leu Ala Ser Gln Ser Ala Gly Ile Thr
145                 150                 155                 160
Val Asn Phe Pro Glu Arg Pro Arg Pro Gly Leu Leu Gly Ser Ile Gly
                165                 170                 175
Glu Gly Arg Tyr Phe Lys Lys Glu Pro Asn Leu Phe Ser His Asp Ala
            180                 185                 190
Val Val Arg Glu Met Pro Thr Gly Val Ser Ser Gln Ala Glu Ser Tyr
            195                 200                 205
Tyr Pro Ser Pro Gly Pro Ile Ser Ser Gly Leu Ser His His Ala Ser
    210                 215                 220
Met Ala Pro Leu Pro Ser Ser Ser Trp Ser Ser Val Ala His Pro Thr
225                 230                 235                 240
Pro Arg Ser Gly Asn Thr Asn Pro Leu Ser Ser Phe Ser Thr Arg Thr
                245                 250                 255
Leu Pro Ser Asn Ser Gln Gly Ile Pro Pro Phe Leu Arg Ile Pro Val
            260                 265                 270
Gly Asn Asp Leu Asn Ala Ser Asn Ala Cys Ile Tyr Asn Asn Ala Asp
    275                 280                 285
Asp Ile Val Gly Met Glu Ala Ser Ser Met Pro Ser Ala Asp Leu Tyr
    290                 295                 300
Gly Ile Ser Asp Pro Asn Met Leu Ser Asn Cys Ser Val Asn Met Met
305                 310                 315                 320
Thr Thr Ser Ser Asp Ser Met Gly Glu Thr Asp Asn Pro Arg Leu Leu
                325                 330                 335
Ser Met Asn Leu Glu Asn Pro Ser Cys Asn Ser Val Leu Asp Pro Arg
            340                 345                 350
Asp Leu Arg Gln Leu His Gln Met Ser Ser Ser Ser Met Ser Ala Gly
        355                 360                 365
Ala Asn Ser Asn Thr Thr Val Phe Val Ser Gln Ser Asp Ala Phe Glu
    370                 375                 380
Gly Ser Asp Phe Ser Cys Ala Asp Asn Ser Met Ile Asn Glu Ser Gly
385                 390                 395                 400
Pro Ser Asn Ser Thr Asn Pro Asn Ser His Gly Phe Val Gln Asp Ser
```

```
                    405                  410                  415
Gln Tyr Ser Gly Ile Gly Ser Met Gln Asn Glu Gln Leu Ser Asp Ser
                420                  425                  430
Phe Pro Tyr Glu Phe Phe Gln Val
                435                  440


        <210> 1222
        <211> 437
        <212> Amino acid
        <213> Homo sapiens



        <400> 1222
Arg Arg Leu Ser Leu Leu Asp Leu Gln Leu Gly Pro Leu Gly Arg Asp
 1               5                  10                  15
Pro Pro Gln Glu Cys Ser Thr Phe Ser Pro Thr Asp Ser Gly Glu Glu
                20                  25                  30
Pro Gly Gln Leu Ser Pro Gly Val Gln Phe Gln Arg Arg Gln Asn Gln
            35                  40                  45
Arg Arg Phe Ser Met Glu Asp Val Ser Lys Arg Leu Ser Leu Pro Met
    50                  55                  60
Asp Ile Arg Leu Pro Gln Glu Phe Leu Gln Lys Leu Gln Met Glu Ser
65                  70                  75                  80
Pro Asp Leu Pro Lys Pro Leu Ser Arg Met Ser Arg Arg Ala Ser Leu
                85                  90                  95
Ser Asp Ile Gly Phe Gly Lys Leu Glu Thr Tyr Val Lys Leu Asp Lys
                100                 105                 110
Leu Gly Glu Gly Thr Tyr Ala Thr Val Phe Lys Gly Arg Ser Lys Leu
            115                 120                 125
Thr Glu Asn Leu Val Ala Leu Lys Glu Ile Arg Leu Glu His Glu Glu
        130                 135                 140
Gly Ala Pro Cys Thr Ala Ile Arg Glu Val Ser Leu Leu Lys Asn Leu
145                 150                 155                 160
Lys His Ala Asn Ile Val Thr Leu His Asp Leu Ile His Thr Asp Arg
                165                 170                 175
Ser Leu Thr Leu Val Phe Glu Tyr Leu Asp Ser Asp Leu Lys Gln Tyr
            180                 185                 190
Leu Asp His Cys Gly Asn Leu Met Ser Met His Asn Val Lys Ile Phe
        195                 200                 205
Met Phe Gln Leu Leu Arg Gly Leu Ala Tyr Cys His His Arg Lys Ile
    210                 215                 220
Leu His Arg Asp Leu Lys Pro Gln Asn Leu Leu Ile Asn Glu Arg Gly
225                 230                 235                 240
Glu Leu Lys Leu Ala Asp Phe Gly Leu Ala Arg Ala Lys Ser Val Pro
                245                 250                 255
Thr Lys Thr Tyr Ser Asn Glu Val Val Thr Leu Trp Tyr Arg Pro Pro
            260                 265                 270
Asp Val Leu Leu Gly Ser Thr Glu Tyr Ser Thr Pro Ile Asp Met Trp
        275                 280                 285
Gly Val Gly Cys Ile His Tyr Glu Met Ala Thr Gly Arg Pro Leu Phe
        290                 295                 300
Pro Gly Ser Thr Val Lys Glu Glu Leu His Lys Ile Asn Arg Leu Leu
305                 310                 315                 320
Gly Thr Pro Thr Glu Glu Thr Trp Pro Gly Val Thr Ala Phe Ser Glu
                325                 330                 335
Phe Arg Thr Tyr Ser Phe Pro Cys Tyr Leu Pro Gln Pro Leu Ile Asn
            340                 345                 350
His Ala Pro Arg Leu Asp Thr Asp Gly Ile His Leu Leu Ser Ser Leu
        355                 360                 365
Leu Leu Tyr Glu Ser Lys Ser Arg Met Ser Ala Glu Ala Ala Leu Ser
```

```
        370                      375                    380
His Ser Tyr Phe Arg Ser Leu Gly Glu Arg Val His Gln Leu Glu Asp
385                      390                    395                    400
Thr Ala Ser Ile Phe Ser Leu Lys Glu Ile Gln Leu Gln Lys Asp Pro
                405                    410                    415
Gly Tyr Arg Gly Leu Ala Phe Gln Gln Pro Gly Arg Gly Lys Asn Arg
                420                    425                    430
Arg Gln Ser Ile Phe
        435     437
```

```
        <210> 1223
        <211> 150
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1223
Cys Thr Pro His Gly Ser Ser Ser Trp Lys Ile Pro Leu Trp Pro
  1               5                  10                 15
Arg His Met Ser Pro Leu His Ser Cys Leu Pro Val Gly Thr Ser Thr
                20                 25                 30
Ser Ser Gly Pro Leu Ala Val Pro Arg Asp Cys Phe His Leu Cys Cys
        35                 40                 45
Leu Trp Gly Gln Leu Leu Leu Ile Ser Cys Pro Leu Ala Cys Gly Gln
    50                 55                 60
Gly Cys Arg Val Ala Gly Gly Gln Gln His Val Pro Gly Gln Ala Leu
65                 70                 75                 80
Gly Thr Leu Ser Pro Leu Val Ser Leu Leu Thr Trp Ala Gly Pro Ser
                85                 90                 95
Leu Asp Trp Pro His Pro Gly Ser Leu Val Thr Pro Arg Cys Pro Ile
                100                105                110
Leu Pro Ala Val Pro Val Leu Val Lys Gly Leu Gly Gly Trp Pro Pro
        115                120                125
Thr Arg Pro Ser Arg Ala Ala Pro Val Ser Gly Pro Trp Asp Gln Leu
        130                135                140
Pro Tyr Phe Pro Gly Leu
145                150
```

```
        <210> 1224
        <211> 276
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1224
Leu Ile Ser Pro Val Trp Gly Asn Ile Gln Arg Ser Arg Ser Val Pro
  1               5                  10                 15
Leu Phe Pro Ser Gly Leu Val Leu Gly Gly Ile Trp Ala Arg Gly Pro
                20                 25                 30
Leu Leu Ala Leu Leu Ala Ser Phe Asn Ile Ile Ser Val Leu Asn Ala
        35                 40                 45
Glu Cys Tyr Leu Lys Gln Ile Leu His Pro Thr Ser His Phe Thr Val
        50                 55                 60
Ser Glu Thr Pro Pro Leu Ser Gly Asn Asp Thr Asp Ser Leu Ser Cys
65                 70                 75                 80
Asp Ser Gly Ser Ser Ala Thr Ser Thr Pro Cys Val Ser Arg Leu Val
```

```
                          85                    90                    95
Thr Gly His His Leu Trp Ala Ser Lys Asn Gly Arg His Val Leu Gly
            100                   105                   110
Leu Ile Glu Asp Tyr Glu Ala Leu Leu Lys Gln Ile Ser Gln Gly Gln
        115                   120                   125
Arg Leu Leu Ala Glu Met Asp Ile Gln Thr Gln Glu Ala Pro Ser Ser
    130                   135                   140
Thr Ser Gln Glu Leu Gly Thr Lys Gly Pro His Pro Ala Pro Leu Ser
145                   150                   155                   160
Lys Phe Val Ser Ser Val Ser Thr Ala Lys Leu Thr Leu Glu Glu Ala
                165                   170                   175
Tyr Arg Arg Leu Lys Leu Leu Trp Arg Val Ser Leu Pro Glu Asp Gly
            180                   185                   190
Gln Cys Pro Leu His Cys Glu Gln Ile Gly Glu Met Lys Ala Glu Val
        195                   200                   205
Thr Lys Leu His Lys Lys Leu Phe Glu Gln Glu Lys Lys Leu Gln Asn
    210                   215                   220
Thr Met Lys Leu Leu Gln Leu Ser Lys Arg Gln Glu Lys Val Ile Phe
225                   230                   235                   240
Asp Gln Leu Val Val Thr His Lys Ile Leu Arg Lys Ala Arg Gly Asn
                245                   250                   255
Leu Glu Leu Arg Pro Gly Gly Ala His Pro Gly Thr Cys Ser Pro Ser
            260                   265                   270
Arg Pro Gly Ser
    275 276


        <210> 1225
        <211> 270
        <212> Amino acid
        <213> Homo sapiens




        <400> 1225
Leu Gly Leu Phe Cys Ile Leu Pro Ile Asp Thr Leu Cys Ala Val Leu
    1               5                   10                  15
Glu Arg Asp Thr Leu Ser Ile Arg Glu Ser Arg Leu Phe Gly Ala Val
            20                  25                  30
Val Arg Trp Ala Glu Ala Glu Cys Gln Arg Gln Gln Leu Pro Val Thr
        35                  40                  45
Phe Gly Asn Lys Gln Lys Val Leu Gly Lys Ala Leu Ser Leu Ile Arg
    50                  55                  60
Phe Pro Leu Met Thr Ile Glu Glu Phe Ala Ala Gly Pro Ala Gln Ser
65                  70                  75                  80
Gly Ile Leu Ser Asp Arg Glu Val Val Asn Leu Phe Leu His Phe Thr
                85                  90                  95
Val Asn Pro Lys Pro Arg Val Glu Tyr Ile Asp Arg Pro Arg Cys Cys
            100                 105                 110
Leu Arg Gly Lys Glu Cys Cys Ile Asn Arg Phe Gln Gln Val Glu Ser
        115                 120                 125
Arg Trp Gly Tyr Ser Gly Thr Ser Asp Arg Ile Arg Phe Thr Val Asn
    130                 135                 140
Arg Arg Ile Ser Ile Val Gly Phe Gly Leu Tyr Gly Ser Ile His Gly
145                 150                 155                 160
Pro Thr Asp Tyr Gln Val Asn Ile Gln Ile Ile Glu Tyr Glu Lys Lys
                165                 170                 175
Gln Thr Leu Gly Gln Asn Asp Thr Gly Phe Ser Cys Asp Gly Thr Ala
            180                 185                 190
Asn Thr Phe Arg Val Met Phe Lys Glu Pro Ile Glu Ile Leu Pro Asn
        195                 200                 205
Val Cys Tyr Thr Ala Cys Ala Thr Leu Lys Gly Pro Asp Ser His Tyr
```

```
            210                      215                   220
Gly Thr Lys Gly Leu Lys Lys Val Val His Glu Thr Pro Ala Ala Ser
225                      230                   235                   240
Lys Thr Val Phe Phe Phe Phe Ser Ser Pro Gly Asn Asn Asn Gly Thr
                245                   250                   255
Ser Ile Glu Asp Gly Gln Ile Pro Glu Ile Ile Phe Tyr Thr
                260                   265                   270
```

```
        <210> 1226
        <211> 273
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1226
Ser Val Trp Trp Asn Ser Glu Val Lys Asp Trp Met Gln Lys Lys Arg
1               5                   10                   15
Arg Gly Leu Arg Asn Ser Arg Ala Thr Ala Gly Asp Ile Ala His Tyr
                20                  25                   30
Tyr Arg Asp Tyr Val Val Lys Lys Gly Leu Gly His Asn Phe Val Ser
        35                  40                   45
Gly Ala Val Val Thr Ala Val Glu Trp Gly Thr Pro Asp Pro Ser Ser
        50                  55                   60
Cys Gly Ala Gln Asp Ser Ser Pro Leu Phe Gln Val Ser Gly Phe Leu
65                  70                   75                   ·80
Thr Arg Asn Gln Ala Gln Gln Pro Phe Ser Leu Trp Ala Arg Asn Val
                85                  90                   95
Val Leu Ala Thr Gly Thr Phe Asp Ser Pro Ala Arg Leu Gly Ile Pro
                100                 105                  110
Gly Glu Ala Leu Pro Phe Ile His His Glu Leu Ser Ala Leu Glu Ala
        115                 120                  125
Ala Thr Arg Val Gly Ala Val Thr Pro Ala Ser Asp Pro Val Leu Ile
        130                 135                  140
Ile Gly Ala Gly Leu Ser Ala Ala Asp Ala Val Leu Tyr Ala Arg His
145                 150                  155                  160
Tyr Asn Ile Pro Val Ile His Ala Phe Arg Arg Ala Val Asp Asp Pro
                165                 170                  175
Gly Leu Val Phe Asn Gln Leu Pro Lys Met Leu Tyr Pro Glu Tyr His
                180                 185                  190
Lys Val His Gln Met Met Arg Glu Gln Ser Ile Leu Ser Pro Ser Pro
        195                 200                  205
Tyr Glu Gly Tyr Arg Ser Leu Pro Arg His Gln Leu Leu Cys Phe Lys
        210                 215                  220
Glu Asp Cys Gln Ala Val Phe Gln Asp Leu Glu Gly Val Glu Lys Val
225                 230                  235                  240
Phe Gly Val Ser Leu Val Leu Val Leu Ile Gly Ser His Pro Asp Leu
                245                 250                  255
Ser Phe Leu Pro Gly Ala Gly Leu Thr Leu Gln Trp Ile Leu Thr Ser
                260                 265                  270
Arg
273
```

```
        <210> 1227
        <211> 86
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1227·
Lys Leu Arg Pro Phe Ile Phe Ser Asn Gln Ser Leu Trp Leu His Ser
 1               5                   10                  15
Tyr Glu Gly Ala Glu Leu Glu Lys Thr Phe Ile Lys·Gly Ser Trp Ala
            20                  25                  30        ·
Thr Phe Trp Val Lys Val Ala Ser Cys Trp Ala Cys Val Leu Leu Tyr
        35              ·    40                  45
Leu Gly Leu Leu Leu Ala Pro Leu Cys Trp Pro Pro Thr Gln Lys Pro
 ·      50              .55                  60
Gln Pro Leu Ile Leu Arg Arg Arg Arg His Arg Ile Ile Ser Pro Asp
65                  70                  75                  80
Asn Lys Tyr Pro Pro Val
                85  86
```

```
        <210> 1228
        <211> 249
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1228
Gln Leu Ile His Leu Ser His Gly Tyr Gln Ile His Trp Thr Asp Tyr
 1               5                   10                  15
Tyr Asn Val Gly Thr Gly Arg Pro Glu Phe Gly Thr Arg Ala Ala His
            20                  25                  30
Lys Ser Leu Ala Gly Ala Glu Leu Lys Thr Leu Lys Asp Phe Val Thr
            35                  40                  45
Val Leu Ala Lys Leu Phe Pro Gly Arg Pro Pro Val Lys Lys Leu Leu
    ·50                  55                  60
Glu Met Leu Gln Glu Trp Leu Ala Ser Leu Pro Leu Asp Arg Ile Pro
65                  70                  75                  80
Tyr Asn Ala Val Leu Asp Leu Val Asn Asn Lys Met Arg Ile Ser Gly
                85                  90                  95
Ile Phe Leu Thr Asn His Ile Lys Trp Val Gly Cys Gln Gly Ser Arg
·           100                 105         ·       110
Ser Glu Leu Arg Gly Tyr Pro Cys Ser Leu Trp Lys Leu Phe His Thr
            115                 120                 125         ·
Leu Thr Val Glu Ala Ser Thr His Pro Asp Ala Leu Val Gly Thr Gly
            130                 135                 ·140
Phe Glu Asp Asp Pro Gln Ala Val Leu Gln Thr Met Arg Arg Tyr Val
145                 150                 155                 160
His Thr Phe Phe Gly Cys Lys Glu Cys Gly Glu His Phe Glu Glu Met
                165                 170                 175
Ala Lys Glu Ser Met Asp Ser Val Lys Thr Pro Asp Gln Ala Ile Leu
            180                 185                 190
Trp Leu Trp Lys Lys His Asn Met Val Asn Gly Arg Leu Ala Gly Glu
            195                 200                 ·205
Lys Pro Leu Gly Met Gly Gly Ser Ala Arg Ala Glu Gly Gly Pro Gly
    210                 ·   215                 220
Pro Gly Thr Ala Arg Thr Ala Arg Leu Pro Trp Gly Leu Ser Leu Ser
·225                 230                 235                 240
Phe Ala Ala Ser Cys His Pro Leu Cys
                245 ·               249
```

```
        <210> 1229
        <211> 800
        <212>Amino acid
```

<213> Homo sapiens

<400> 1229

His	Gly	Gly	Ala	Thr	Phe	Ile	Asn	Ala	Phe	Val	Thr	Thr	Pro	Met	Cys
1				5					10					15	

Cys	Pro	Ser	Arg	Ser	Ser	Met	Leu	Thr	Gly	Lys	Tyr	Val	His	Asn	His
			20				25					30			

Asn	Val	Tyr	Thr	Asn	Asn	Glu	Asn	Cys	Ser	Ser	Pro	Ser	Trp	Gln	Ala
		35				40				45					

Met	His	Glu	Pro	Arg	Thr	Phe	Ala	Val	Tyr	Leu	Asn	Asn	Thr	Gly	Tyr
	50				55					60					

Arg	Thr	Ala	Phe	Phe	Gly	Lys	Tyr	Leu	Asn	Glu	Tyr	Asn	Gly	Ser	Tyr
65				70					75						80

Ile	Pro	Pro	Gly	Trp	Arg	Glu	Trp	Leu	Gly	Leu	Ile	Lys	Asn	Ser	Arg
			85				90					95			

Phe	Tyr	Asn	Tyr	Thr	Val	Cys	Arg	Asn	Gly	Ile	Lys	Glu	Lys	His	Gly
			100				105				110				

Phe	Asp	Tyr	Ala	Lys	Asp	Tyr	Phe	Thr	Asp	Leu	Ile	Thr	Asn	Glu	Ser
	115				120					125					

Ile	Asn	Tyr	Phe	Lys	Met	Ser	Lys	Arg	Met	Tyr	Pro	His	Arg	Pro	Val
	130				135				140						

Met	Met	Val	Ile	Ser	His	Ala	Glu	Pro	His	Gly	Pro	Glu	Asp	Ser	Ala
145				150				155					160		

Pro	Gln	Phe	Ser	Lys	Leu	Tyr	Pro	Asn	Ala	Ser	Gln	His	Ile	Thr	Pro
			165				170				175				

Ser	Tyr	Asn	Tyr	Ala	Pro	Asn	Met	Asp	Lys	His	Trp	Ile	Met	Gln	Tyr
		180				185				190					

Thr	Gly	Pro	Met	Leu	Pro	Ile	His	Met	Glu	Phe	Thr	Asn	Ile	Leu	Gln
	195				200					205					

Arg	Lys	Arg	Leu	Gln	Thr	Leu	Met	Ser	Val	Asp	Asp	Ser	Val	Glu	Arg
	210				215					220					

Leu	Tyr	Asn	Met	Leu	Val	Glu	Thr	Gly	Glu	Leu	Glu	Asn	Thr	Tyr	Ile
225				230					235					240	

Ile	Tyr	Thr	Ala	Asp	His	Gly	Tyr	His	Ile	Gly	Gln	Phe	Gly	Leu	Val
			245				250				255				

Lys	Gly	Lys	Ser	Met	Pro	Tyr	Asp	Phe	Asp	Ile	Arg	Val	Pro	Phe	Phe
		260				265				270					

Ile	Arg	Gly	Pro	Ser	Val	Glu	Pro	Gly	Ser	Ile	Val	Pro	Gln	Ile	Val
	275				280					285					

Leu	Asn	Ile	Asp	Leu	Ala	Pro	Thr	Ile	Leu	Asp	Ile	Ala	Gly	Leu	Asp
	290				295				300						

Thr	Pro	Pro	Asp	Val	Asp	Gly	Lys	Ser	Val	Leu	Lys	Leu	Leu	Asp	Pro
305				310					315				320		

Glu	Lys	Pro	Gly	Asn	Arg	Phe	Arg	Thr	Asn	Lys	Lys	Ala	Lys	Ile	Trp
			325				330				335				

Arg	Asp	Thr	Phe	Leu	Val	Glu	Arg	Gly	Lys	Phe	Leu	Arg	Lys	Lys	Glu
		340				345				350					

Glu	Ser	Ser	Lys	Asn	Ile	Gln	Gln	Ser	Asn	His	Leu	Pro	Lys	Tyr	Glu
	355				360				365						

Arg	Val	Lys	Glu	Leu	Cys	Gln	Gln	Ala	Arg	Tyr	Gln	Thr	Ala	Cys	Glu
	370				375				380						

Gln	Pro	Gly	Gln	Lys	Trp	Gln	Cys	Ile	Glu	Asp	Thr	Ser	Gly	Lys	Leu
385				390				395					400		

Arg	Ile	His	Lys	Cys	Lys	Gly	Pro	Ser	Asp	Leu	Leu	Thr	Val	Arg	Gln
		405				410				415					

Ser	Thr	Arg	Asn	Leu	Tyr	Ala	Arg	Gly	Phe	His	Asp	Lys	Asp	Lys	Glu
		420				425				430					

Cys	Ser	Cys	Arg	Glu	Ser	Gly	Tyr	Arg	Ala	Ser	Arg	Ser	Gln	Arg	Lys
	435				440				445						

Ser	Gln	Arg	Gln	Phe	Leu	Arg	Asn	Gln	Gly	Thr	Pro	Lys	Tyr	Lys	Pro

```
        450                    455                    460
Arg Phe Val His Thr Arg Gln Thr Arg Ser Leu Ser Val Glu Phe Glu
465                    470                    475                    480
Gly Glu Ile Tyr Asp Ile Asn Leu Glu Glu Glu Glu Glu Leu Gln Val
                485                    490                    495
Leu Gln Pro Arg Asn Ile Ala Lys Arg His Asp Glu Gly His Lys Gly
                500                    505                    510
Pro Arg Asp Leu Gln Ala Ser Ser Gly Gly Asn Arg Gly Arg Met Leu
                515                    520                    525
Ala Asp Ser Ser Asn Ala Val Gly Pro Pro Thr Thr Val Arg Val Thr
                530                    535                    540
His Lys Cys Phe Ile Leu Pro Asn Asp Ser Ile His Cys Glu Arg Glu
545                    550                    555                    560
Leu Tyr Gln Ser Ala Arg Ala Trp Lys Asp His Lys Ala Tyr Ile Asp
                565                    570                    575
Glu Glu Ile Glu Ala Leu Gln Asp Lys Ile Lys Asn Leu Arg Glu Val
                580                    585                    590
Arg Gly His Leu Lys Arg Arg Lys Pro Glu Glu Cys Ser Cys Ser Lys
                595                    600                    605
Gln Ser Tyr Tyr Asn Lys Glu Lys Gly Val Lys Lys Gln Glu Lys Leu
                610                    615                    620
Lys Ser His Leu His Pro Phe Lys Glu Ala Ala Gln Glu Val Asp Ser
625                    630                    635                    640
Lys Leu Gln Leu Phe Lys Glu Asn Asn Arg Arg Arg Lys Lys Glu Arg
                645                    650                    655
Lys Glu Lys Arg Arg Gln Arg Lys Gly Glu Glu Cys Ser Leu Pro Gly
                660                    665                    670
Leu Thr Cys Phe Thr His Asp Asn Asn His Trp Gln Thr Ala Pro Phe
                675                    680                    685
Trp Asn Leu Gly Ser Phe Cys Ala Cys Thr Ser Ser Asn Asn Asn Thr
                690                    695                    700
Tyr Trp Cys Leu Arg Thr Val Asn Glu Thr His Asn Phe Leu Phe Cys
705                    710                    715                    720
Glu Phe Ala Thr Gly Phe Leu Glu Tyr Phe Asp Met Asn Thr Asp Pro
                725                    730                    735
Tyr Gln Leu Thr Asn Thr Val His Thr Val Glu Arg Gly Ile Leu Asn
                740                    745                    750
Gln Leu His Val Gln Leu Met Glu Leu Arg Ser Cys Gln Gly Tyr Lys
                755                    760                    765
Gln Cys Asn Pro Arg Pro Lys Asn Leu Asp Val Gly Asn Lys Asp Gly
770                    775                    780
Gly Ser Tyr Asp Leu His Arg Gly Gln Leu Trp Asp Gly Trp Glu Gly
785                    790                    795                    800
```

```
<210> 1230
<211> 698
<212> Amino acid
<213> Homo sapiens
```

```
        <400> 1230
His Leu Leu Ile Ala Gln Glu Leu Ala Asp Arg Val Gly Glu Gly Arg
1                   5                    10                    15
Ala Cys Trp Ser Leu Gly Asn Ala Tyr Val Ser Met Gly Arg Pro Ala
                20                    25                    30
Gln Ala Leu Thr Phe Ala Lys Lys His Leu Gln Ile Ser Gln Glu Ile
                35                    40                    45
Gly Asp Arg His Gly Glu Leu Thr Ala Arg Met Asn Val Ala Gln Leu
```

742

```
           50                      55                    60
Gln Leu Val Leu Gly Arg Leu Thr Ser Pro Ala Ala Ser Glu Lys Pro
65                      70                    75                    80
Asp Leu Ala Gly Tyr Glu Ala Gln Gly Ala Arg Pro Lys Arg Thr Gln
                85                    90                    95
Arg Leu Ser Ala Glu Thr Trp Asp Leu Leu Arg Leu Pro Leu Glu Arg
                100                   105                   110
Glu Gln Asn Gly Asp Ser His His Ser Gly Asp Trp Arg Gly Pro Ser
                115                   120                   125
Arg Asp Ser Leu Pro Leu Pro Val Arg Ser Arg Lys Tyr Gln Glu Gly
        130                   135                   140
Pro Asp Ala Glu Arg Arg Pro Arg Glu Gly Ser His Ser Pro Leu Asp
145                   150                   155                   160
Ser Ala Asp Val Arg Val His Val Pro Arg Thr Ser Ile Pro Arg Ala
                165                   170                   175
Pro Ser Ser Asp Glu Glu Cys Phe Phe Asp Leu Leu Thr Lys Phe Gln
                180                   185                   190
Ser Ser Arg Met Asp Asp Gln Arg Cys Pro Leu Asp Asp Gly Gln Ala
                195                   200                   205
Gly Ala Ala Glu Ala Thr Ala Ala Pro Thr Leu Glu Asp Arg Ile Ala
        210                   215                   220
Gln Pro Ser Met Thr Ala Ser Pro Gln Thr Glu Glu Phe Phe Asp Leu
225                   230                   235                   240
Ile Ala Ser Ser Gln Ser Arg Arg Leu Asp Asp Gln Arg Ala Ser Val
                245                   250                   255
Gly Ser Leu Pro Gly Leu Arg Ile Thr His Ser Asn Ala Gly His Leu
                260                   265                   270
Arg Gly His Gly Glu Pro Gln Glu Pro Gly Asp Asp Phe Phe Asn Met
        275                   280                   285
Leu Ile Lys Tyr Gln Ser Ser Arg Ile Asp Asp Gln Arg Cys Pro Pro
        290                   295                   300
Pro Asp Val Leu Pro Arg Gly Pro Thr Met Pro Asp Glu Asp Phe Phe
305                   310                   315                   320
Ser Leu Ile Gln Arg Val Gln Ala Lys Arg Met Asp Glu Gln Arg Val
                325                   330                   335
Asp Leu Ala Gly Gly Pro Gly Ala Gly Gly Arg Arg Pro Ala Arg Ala
        340                   345                   350
Pro Ala Ala Val Pro Ala Trp Cys Glu Leu Arg Pro Cys Ala His Arg
        355                   360                   365
Gln Ala His Pro Ala Pro Thr Pro Gly Arg Arg Ser His Ser His Ser
        370                   375                   380
His Val Leu Pro Arg Pro Leu Pro Arg Thr Gly Thr Gly His Ala Ala
385                   390                   395                   400
Pro Arg Pro Pro Arg Pro Arg Ala Thr Gly Ser Gly Gln Ala Ala Arg
                405                   410                   415
Gly Gly Arg Ala Cys Phe His Pro Gly Leu Ala Pro Met Ala Leu Ser
                420                   425                   430
Phe Leu Pro Ser Ala Pro Ala Ala Gly Arg Thr Gly Pro Ser Ala Cys
        435                   440                   445
Arg Pro Arg Pro Gly Ala Val Arg Leu Pro His Pro Leu Pro Gln Ala
        450                   455                   460
Leu Pro Val Leu Pro Cys Pro Ala Lys Cys Glu Thr Leu Leu Ser Pro
465                   470                   475                   480
Ser Pro Ser Pro Lys Val Ser Leu Ser Arg Leu Leu Gly Pro Pro Arg
                485                   490                   495
Thr Gly Pro Cys Ser Val Pro Pro Glu Leu Val Leu Gly Trp Pro Cys
                500                   505                   510
Asp Arg His Ala Pro Pro Leu Gln Leu Arg Pro Gly Ala Gly Leu Pro
        515                   520                   525
Pro Ser Leu Ser Pro His Ser Pro Ala Arg Gly Gln Gln Pro Gln Lys
        530                   535                   540
Ala Pro Gln Thr Thr His Gly Arg Pro Gly Cys Ser Gly Ser Pro Glu
545                   550                   555                   560
Val Pro Pro Ala Glu Ser Gln Gly Pro Ala Gly Ala Ser Thr Gly Ala
```

```
                        565                      570                      575
Gly Pro Ile Ser Lys Ala Glu Gly Met Ala Gly His Glu Leu Arg His
              580                      585                      590
Ser Lys Thr Pro Ser Gln Glu Lys Gly Gln Gly Leu Val Leu Gly Met
              595                      600                      605
Leu Thr Gly Ser Lys Ser Ser Ala Gln Ser Gly Trp Glu Val Ala Pro
      610                      615                      620
Gly Ser Val Thr Leu Thr Gln Val Gly Gly Trp Ser Val Glu Ala Gly
625                      630                      635                      640
Glu Ala Ser Leu Ser Ser Thr Leu Gln Thr Pro His Met Arg Thr Pro
                  645                      650                      655
Leu Leu Pro Pro Ala Gly Gly Asp Asp Ile Thr Ala Leu Ser Met Gly
          660                      665                      670
Arg Gly Leu Thr Gly His Gln Val Arg Asp Pro Arg Thr Gly Arg Thr
      675                      680                      685
Cys Trp Ser Leu Arg Trp Ala Pro Gly Ala
690                      695                      698
```

```
    <210> 1231
    <211> 131
    <212>Amino acid
    <213> Homo sapiens
```

```
    <400> 1231
Asn Ser Ala Ala Asp Leu Ala Ile Phe Ala Leu Trp Gly Leu Lys Pro
1                   5                   10                  15
Val Val Tyr Leu Leu Ala Ser Ser Phe Leu Gly Leu Gly Leu His Pro
              20                      25                      30
Ile Ser Gly His Phe Val Ala Glu His Tyr Met Phe Leu Lys Gly His
          35                      40                      45
Glu Thr Tyr Ser Tyr Tyr Gly Pro Leu Asn Trp Ile Thr Phe Asn Val
      50                      55                      60
Gly Tyr His Val Glu His His Asp Phe Pro Ser Ile Pro Gly Tyr Asn
65                      70                      75                      80
Leu Pro Leu Val Arg Lys Ile Ala Pro Glu Tyr Tyr Asp His Leu Pro
                  85                      90                      95
Gln His His Ser Trp Val Lys Val Leu Trp Asp Phe Val Phe Glu Asp
              100                     105                     110
Ser Leu Gly Pro Tyr Ala Arg Val Lys Arg Val Tyr Arg Leu Ala Lys
      115                     120                     125
Asp Gly Leu
130 131
```

```
    <210> 1232
    <211> 71
    <212>Amino acid
    <213> Homo sapiens
```

```
    <400> 1232
Gln Glu Ser Gly Phe Ser Cys Lys Gly Pro Gly Gln Asn Val Ala Val
1                   5                   10                      15
Thr Arg Ala His Pro Asp Ser Gln Gly Arg Arg Arg Arg Pro Glu Arg
              20                      25                      30
Gly Ala Arg Gly Gly Gln Val Phe Tyr Asn Ser Glu Tyr Gly Glu Leu
```

744

```
                    35                    40                    45
    Ser Glu Pro Ser Glu Glu Asp His Cys Ser Pro Ser Ala Arg Val Thr
        50                    55                    60
    Phe Phe Thr Asp Asn Ser Tyr
    65                    70  71
```

```
        <210> 1233
        <211> 146
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 1233
    Val Ile Val His Ala Arg Pro Ile Arg Thr Arg Ala Ser Lys Tyr Tyr
    1               5                    10                   15
    Ile Pro Glu Ala Val Tyr Gly Leu Pro Ala Tyr Pro Ala Tyr Ala Gly
                20                    25                    30
    Gly Gly Gly Phe Val Leu Ser Gly Ala Thr Leu His Arg Leu Ala Gly
                35                    40                    45
    Ala Cys Ala Gln Val Glu Leu Phe Pro Ile Asp Asp Val Phe Leu Gly
        50                    55                    60
    Met Cys Leu Gln Arg Leu Arg Leu Thr Pro Glu Pro His Pro Ala Phe
    65                    70                    75                    80
    Arg Thr Phe Gly Ile Pro Gln Pro Ser Ala Ala Pro His Leu Ser Thr
            J         85                    90                    95
    Phe Asp Pro Cys Phe Tyr Arg Glu Leu Val Val Val His Gly Leu Ser
                100                   105                   110
    Ala Ala Asp Ile Trp Leu Met Trp Arg Leu Leu His Gly Pro His Gly
                115                   120                   125
    Pro Ala Cys Ala His Pro Gln Pro Val Ala Ala Gly Pro Phe Gln Trp
        130                   135                   140
    Asp Ser
    145 146
```

```
        <210> 1234
        <211> 299
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 1234
    Met Ala Ser Ala Ala Cys Ser Met Asp Pro Ile Asp Ser Phe Glu Leu
    1               5                    10                   15
    Leu Asp Leu Leu Phe Asp Arg Gln Asp Gly Ile Leu Arg His Val Glu
                20                    25                    30
    Leu Gly Glu Gly Trp Gly His Val Lys Asp Gln Val Leu Pro Asn Pro
                35                    40                    45
    Asp Ser Asp Asp Phe Leu Ser Ser Ile Leu Gly Ser Gly Asp Ser Leu
        50                    55                    60
    Pro Ser Ser Pro Leu Trp Ser Pro Glu Gly Ser Asp Ser Gly Ile Ser
    65                    70                    75                    80
    Glu Asp Leu Pro Ser Asp Pro Gln Asp Thr Pro Pro Arg Ser Gly Pro
                85                    90                    95
    Ala Thr Ser Pro Ala Gly Cys His Pro Ala Gln Pro Gly Lys Gly Pro
                100                   105                   110
    Cys Leu Ser Tyr His Pro Gly Asn Ser Cys Ser Thr Thr Thr Pro Gly
```

```
         115                      120                     125
Pro Val Ile Gln Gln Gln His His Leu Gly Ala Ser Tyr Leu Leu Arg
     130                     135                   140
Pro Gly Ala Gly His Cys Gln Glu Leu Val Leu Thr Glu Asp Glu Lys
145                     150                     155                   160
Lys Leu Leu Ala Lys Glu Gly Ile Thr Leu Pro Thr Gln Leu Pro Leu
                 165                     170                     175
Thr Lys Tyr Glu Glu Arg Val Leu Lys Lys Ile Arg Arg Lys Ile Arg
             180                     185                   190
Asn Lys Gln Ser Ala Gln Glu Ser Arg Lys Lys Lys Glu Tyr Ile
         195                     200                   205
Asp Gly Leu Glu Thr Arg Ser Cys Cys Cys Pro Leu Pro Ser Ser Ser
     210                     215                   220
Ser Pro Pro Ser Ala Leu Leu Ala Pro Thr Lys Pro Arg Ala Leu Gly
225                     230                     235                   240
Thr Leu Arg Leu Tyr Glu Cys Ser Pro Glu Leu Cys Thr Thr Met Leu
                 245                     250                     255
Pro Pro Ala Trp Leu Leu Met Leu Cys Gln Ala Pro Arg Pro Gln Asp
             260                     265                     270
Pro Asp Pro Arg Leu Thr Gln Pro Glu Lys Ser Leu Gln Glu Ala Pro
         275                     280                   285
Gly Gln Thr Gly Ala Ser Arg Thr Pro Arg Thr
     290                     295                   299


         <210> 1235
         <211> 1098
         <212>Amino acid
         <213> Homo sapiens




         <400> 1235
Ala Arg Gly Arg Arg Ser Arg Pro Val Trp Ala Ala Ser Trp Gly Gly
    1               5                   10                      15
Arg Gly Arg Pro Ala Ala Arg Arg Arg Pro Arg Gly Leu Ala Ala Thr
             20                     25                   30
Met Gly Phe Glu Leu Asp Arg Phe Asp Gly Asp Val Asp Pro Asp Leu
         35                     40                   45
Lys Cys Ala Leu Cys His Lys Val Leu Glu Asp Pro Leu Thr Thr Pro
     50                     55                   60
Cys Gly His Val Phe Cys Ala Gly Cys Val Leu Pro Trp Val Val Gln
65                     70                     75                   80
Glu Gly Ser Cys Pro Ala Arg Cys Arg Gly Arg Leu Ser Ala Lys Glu
                 85                     90                   95
Leu Asn His Val Leu Pro Leu Lys Arg Leu Ile Leu Lys Leu Asp Ile
             100                     105                   110
Lys Cys Ala Tyr Ala Thr Arg Gly Cys Gly Arg Val Val Lys Leu Gln
         115                     120                   125
Gln Leu Pro Glu His Leu Glu Arg Cys Asp Phe Ala Pro Ala Arg Cys
     130                     135                   140
Arg His Ala Gly Cys Gly Gln Val Leu Leu Arg Arg Asp Val Glu Ala
145                     150                     155                   160
His Met Arg Asp Ala Cys Asp Ala Arg Pro Val Gly Arg Cys Gln Glu
                 165                     170                     175
Gly Cys Gly Leu Pro Leu Thr His Gly Glu Gln Arg Ala Gly Gly His
             180                     185                   190
Cys Cys Ala Arg Ala Leu Arg Ala His Asn Gly Ala Leu Gln Ala Arg
         195                     200                   205
Leu Gly Ala Leu His Lys Ala Leu Lys Lys Glu Ala Leu Arg Ala Gly
     210                     215                   220
Lys Arg Glu Lys Ser Leu Val Ala Gln Leu Ala Ala Ala Gln Leu Glu
```

```
     225                    230                    235                    240
     Leu Gln Met Thr Ala Leu Arg Tyr Gln Lys Lys Phe Thr Glu Tyr Ser
                     245                    250                    255
     Ala Arg Leu Asp Ser Leu Ser Arg Cys Val Ala Ala Pro Pro Gly Gly
                     260                    265                    270
     Lys Gly Glu Glu Thr Lys Ser Leu Thr Leu Val Leu His Arg Asp Ser
                     275                    280                    285
     Gly Ser Leu Gly Phe Asn Ile Ile Gly Gly Arg Pro Ser Val Asp Asn
                     290                    295                    300
     His Asp Gly Ser Ser Ser Glu Gly Ile Phe Val Ser Lys Ile Val Asp
     305                    310                    315                    320
     Ser Gly Pro Ala Ala Lys Glu Gly Gly Leu Gln Ile His Asp Arg Ile
                     325                    330                    335
     Ile Glu Val Asn Gly Arg Asp Leu Ser Arg Ala Thr His Asp Gln Ala
                     340                    345                    350
     Val Glu Ala Phe Lys Thr Ala Lys Glu Pro Ile Val Val Gln Val Leu
                     355                    360                    365
     Arg Arg Thr Pro Arg Thr Lys Met Phe Thr Pro Pro Ser Glu Ser Gln
       370                    375                    380
     Leu Val Asp Thr Gly Thr Gln Thr Asp Ile Thr Phe Glu His Ile Met
     385                    390                    395                    400
     Ala Leu Thr Lys Met Ser Ser Pro Ser Pro Pro Val Leu Asp Pro Tyr
                     405                    410                    415
     Leu Leu Pro Glu Glu His Pro Ser Ala His Glu Tyr Tyr Asp Pro Asn
                     420                    425                    430
     Asp Tyr Ile Gly Asp Ile His Gln Glu Met Asp Arg Glu Glu Leu Glu
                     435                    440                    445
     Leu Glu Glu Val Asp Leu Tyr Arg Met Asn Ser Gln Asp Lys Leu Gly
                     450                    455                    460
     Leu Thr Val Cys Tyr Arg Thr Asp Asp Glu Asp Asp Ile Gly Ile Tyr
     465                    470                    475                    480
     Ile Ser Glu Ile Asp Pro Asn Ser Ile Ala Ala Lys Asp Gly Arg Ile
                     485                    490                    495
     Arg Glu Gly Asp Arg Ile Ile Gln Ile Asn Gly Ile Glu Val Gln Asn
                     500                    505                    510
     Arg Glu Glu Ala Val Ala Leu Leu Thr Ser Glu Glu Asn Lys Asn Phe
                     515                    520                    525
     Ser Leu Leu Ile Ala Arg Ala Glu Leu Gln Leu Asp Glu Gly Trp Met
                     530                    535                    540
     Asp Asp Asp Arg Asn Asp Phe Leu Asp Asp Leu His Met Asp Met Leu
     545                    550                    555                    560
     Glu Glu Gln His His Gln Ala Met Gln Phe Thr Ala Ser Val Leu Gln
                     565                    570                    575
     Gln Lys Lys His Asp Glu Asp Gly Gly Thr Thr Asp Thr Ala Thr Ile
                     580                    585                    590
     Leu Ser Asn Gln His Glu Lys Asp Ser Gly Val Gly Arg Thr Asp Glu
                     595                    600                    605
     Ser Thr Arg Asn Asp Glu Ser Ser Glu Gln Glu Asn Asn Gly Asp Asp
                     610                    615                    620
     Ala Thr Ala Ser Ser Asn Pro Leu Ala Gly Gln Arg Lys Leu Thr Cys
     625                    630                    635                    640
     Ser Gln Asp Thr Leu Gly Ser Gly Asp Leu Pro Phe Ser Asn Lys Ser
                     645                    650                    655
     Phe Ile Ser Pro Glu Cys Thr Gly Ala Ala Tyr Leu Gly Ile Pro Val
                     660                    665                    670
     Asp Glu Cys Glu Arg Phe Arg Glu Leu Leu Glu Leu Lys Cys Gln Val
       675                    680                    685
     Lys Ser Ala Thr Pro Tyr Gly Leu Tyr Tyr Pro Ser Gly Pro Leu Asp
       690                    695                    700
     Ala Gly Lys Ser Asp Pro Glu Ser Val Asp Lys Glu Leu Glu Leu Leu
     705                    710                    715                    720
     Asn Glu Glu Leu Arg Ser Ile Glu Leu Glu Cys Leu Ser Ile Val Arg
                     725                    730                    735
     Ala His Lys Met Gln Gln Leu Lys Glu Gln Tyr Arg Glu Ser Trp Met
```

```
                        740                    745                    750
Leu His Asn Ser Gly Phe Arg Asn Tyr Asn Thr Ser Ile Asp Val Arg
        755                    760                    765
Arg His Glu Leu Ser Asp Ile Thr Glu Leu Pro Glu Lys Ser Asp Lys
        770                    775                    780
Asp Ser Ser Ser Ala Tyr Asn Thr Gly Glu Ser Cys Arg Ser Thr Pro
785                    790                    795                    800
Leu Thr Leu Glu Ile Ser Pro Asp Asn Ser Leu Arg Arg Ala Ala Glu
                805                    810                    815
Gly Ile Ser Cys Pro Ser Ser Glu Gly Ala Val Gly Thr Thr Glu Ala
                820                    825                    830
Tyr Gly Pro Ala Ser Lys Asn Leu Leu Ser Ile Thr Glu Asp Pro Glu
        835                    840                    845
Val Gly Thr Pro Thr Tyr Ser Pro Ser Leu Lys Glu Leu Asp Pro Asn
        850                    855                    860
Gln Pro Leu Glu Ser Lys Glu Arg Arg Ala Ser Asp Gly Ser Arg Ser
865                    870                    875                    880
Pro Thr Pro Ser Gln Lys Leu Gly Ser Ala Tyr Leu Pro Ser Tyr His
                885                    890                    895
His Ser Pro Tyr Lys His Ala His Ile Pro Ala His Ala Gln His Tyr
                900                    905                    910
Gln Ser Tyr Met Gln Leu Ile Gln Gln Lys Ser Ala Val Glu Tyr Ala
        915                    920                    925
Gln Ser Gln Met Ser Leu Val Ser Met Cys Lys Asp Leu Ser Ser Pro
        930                    935                    940
Thr Pro Ser Glu Pro Arg Met Glu Trp Lys Val Lys Ile Arg Ser Asp
945                    950                    955                    960
Gly Thr Arg Tyr Ile Thr Lys Arg Pro Val Arg Asp Arg Leu Leu Arg
                965                    970                    975
Glu Arg Ala Leu Lys Ile Arg Glu Glu Arg Ser Gly Met Thr Thr Asp
                980                    985                    990
Asp Asp Ala Val Ser Glu Met Lys Met Gly Arg Tyr Trp Ser Lys Glu
                995                    1000                   1005
Glu Arg Lys Gln His Leu Val Lys Ala Lys Glu Gln Arg Arg Arg Arg
        1010                   1015                   1020
Glu Phe Met Met Gln Ser Arg Leu Asp Cys Leu Lys Glu Gln Gln Ala
1025                   1030                   1035                   1040
Ala Asp Asp Arg Lys Glu Met Asn Ile Leu Glu Leu Ser His Lys Lys
                1045                   1050                   1055
Met Met Lys Lys Arg Asn Lys Lys Ile Phe Asp Asn Trp Met Thr Ile
                1060                   1065                   1070
Gln Glu Leu Leu Thr His Gly Thr Lys Ser Pro Asp Gly Thr Arg Val
        1075                   1080                   1085
Tyr Asn Ser Phe Leu Ser Val Thr Thr Val
1090                   1095        1098
```

        <210> 1236
        <211> 51
        <212>Amino acid
        <213> Homo sapiens

        <400> 1236
```
Phe Phe Phe Leu Val Glu Met Gly Phe Cys His Val Gly Gln Gly Gly
 1               5                  10                     15
Leu Thr Leu Ile Gly Ser Ser Asn Leu Pro Ala Ser Ala Ser Lys Ser
            20                  25                     30
Ala Gly Ile Thr Gly Val Ser His Cys Ala Arg Pro Asp Phe Lys Ser
        35                  40                     45
Cys Val Glu
```

50   51

<210> 1237
<211> 70
<212>Amino acid
<213> Homo sapiens

<400> 1237
Leu Ala Gly Arg Lys Val Leu Leu Phe Val Ser Gly Tyr Val Val Gly
 1   5   10   15
Trp Gly Pro Ile Thr Trp Leu Leu Met Ser Glu Val Leu Pro Leu Arg
            20   25   30
Ala Arg Gly Val Ala Ser Gly Leu Cys Val Leu Ala Ser Trp Leu Thr
        35   40   45
Ala Phe Val Leu Thr Lys Ser Phe Leu Pro Gly Gly Val Ser Val Gln
    50   55   60
Pro Gln Ala Pro Gly Pro
65   70

<210> 1238
<211> 114
<212>Amino acid
<213> Homo sapiens

<400> 1238
Phe Trp Ala Pro Gly Pro Pro Gly Val Gly Ala Ala Val Gly Asp Ala
 1   5   10   15
Ser Thr Arg Ser Leu Arg Glu Ser Cys Pro Ser Pro Ser Pro Gly Arg
            20   25   30
Leu Arg Arg Thr Thr Ala Pro Trp Ser Ser Gln Ala Arg Ala Ala Ala
        35   40   45
Pro Ala Pro Ser Ser Ser Cys Arg Gly Pro Asp Gly Ala Ser Ser Pro
    50   55   60
Arg Asp Leu Pro Trp Arg Pro Trp Lys Ile Leu Arg Arg Thr Pro Leu
65   70   75   80
Ser Gly Asp Val Glu Leu Ser Gln Val His Pro Asp Gln Arg Ile Leu
                85   90   95
Arg Arg Phe Ile Leu Ser Arg Thr Cys Gly Asn Thr Ile Pro Gly Met
            100   105   110
Ala Glu
    114

<210> 1239
<211> 174
<212>Amino acid
<213> Homo sapiens

<400> 1239
Met Arg Arg Phe Leu Ser Lys Val Tyr Ser Phe Pro Met Arg Lys Leu

749

```
  1                   5                    10                   15
Ile Leu Phe Leu Val Phe Pro Val Val Arg Gln Thr Pro Thr Gln His
            20                   25                   30
Phe Lys Asn Gln Phe Pro Ala Leu His Trp Glu His Glu Leu Gly Leu
            35                   40                   45
Ala Phe Thr Lys Asn Arg Met Asn Tyr Thr Asn Lys Phe Leu Leu Ile
            50                   55                   60
Pro Glu Ser Gly Asp Tyr Phe Ile Tyr Ser Gln Val Thr Phe Arg Gly
65                   70                   75                   80
Met Thr Ser Glu Cys Ser Glu Ile Arg Gln Ala Gly Arg Pro Asn Lys
                85                   90                   95
Pro Asp Ser Ile Thr Val Val Ile Thr Lys Val Thr Asp Ser Tyr Pro
            100                  105                  110
Glu Pro Thr Gln Leu Leu Met Gly Thr Lys Ser Val Cys Glu Val Gly
            115                  120                  125
Ser Asn Trp Phe Gln Pro Ile Tyr Leu Gly Ala Met Phe Ser Leu Gln
            130                  135                  140
Glu Gly Asp Lys Leu Met Val Asn Val Ser Asp Ile Ser Leu Val Asp
145                  150                  155                  160
Tyr Thr Lys Glu Asp Lys Thr Phe Phe Gly Ala Phe Leu Leu
                165                  170                  174
```

```
<210> 1240
<211> 425
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1240
Phe Val Trp Asp Glu Val Ala Gln Arg Ser Gly Cys Glu Glu Arg Trp
 1                   5                    10                   15
Leu Val Ile Asp Arg Lys Val Tyr Asn Ile Ser Glu Phe Thr Arg Arg
            20                   25                   30
His Pro Gly Gly Ser Arg Val Ile Ser His Tyr Ala Gly Gln Asp Ala
            35                   40                   45
Thr Asp Pro Phe Val Ala Phe His Ile Asn Lys Gly Leu Val Lys Lys
     50                   55                   60
Tyr Met Asn Ser Leu Leu Ile Gly Glu Leu Ser Pro Glu Gln Pro Ser
65                   70                   75                   80
Phe Glu Pro Thr Lys Asn Lys Glu Leu Thr Asp Glu Phe Arg Glu Leu
                85                   90                   95
Arg Ala Thr Val Glu Arg Met Gly Leu Met Lys Ala Asn His Val Phe
            100                  105                  110
Phe Leu Leu Tyr Leu Leu His Ile Leu Leu Leu Asp Gly Ala Ala Trp
            115                  120                  125
Leu Thr Leu Trp Val Phe Gly Thr Ser Phe Leu Pro Phe Leu Leu Cys
            130                  135                  140
Ala Val Leu Leu Ser Ala Val Gln Ala Gln Ala Gly Trp Leu Gln His
145                  150                  155                  160
Asp Phe Gly His Leu Ser Val Phe Ser Thr Ser Lys Trp Asn His Leu
                165                  170                  175
Leu His His Phe Val Ile Gly His Leu Lys Gly Ala Pro Ala Ser Trp
            180                  185                  190
Trp Asn His Met His Phe Gln His His Ala Lys Pro Asn Cys Phe Arg
            195                  200                  205
Lys Asp Pro Asp Ile Asn Met His Pro Phe Phe Phe Ala Leu Gly Lys
            210                  215                  220
Ile Leu Ser Val Glu Leu Gly Lys Gln Lys Lys Lys Tyr Met Pro Tyr
225                  230                  235                  240
Asn His Gln His Lys Tyr Phe Phe Leu Ile Gly Pro Pro Ala Leu Leu
```

```
                      245                  250                  255
Pro Leu Tyr Phe Gln Trp Tyr Ile Phe Tyr Phe Val Ile Gln Arg Lys
                260                      265                      270
Lys Trp Val Asp Leu Ala Trp Met Ile Thr Phe Tyr Val Arg Phe Phe
            275                      280                      285
Leu Thr Tyr Val Pro Leu Leu Gly Leu Lys Ala Phe Leu Gly Leu Phe
        290                      295                      300
Phe Ile Val Arg Phe Leu Glu Ser Asn Trp Phe Val Trp Val Thr Gln
305                      310                      315                      320
Met Asn His Ile Pro Met His Ile Asp His Asp Arg Asn Met Asp Trp
                325                      330                      335
Val Ser Thr Gln Leu Gln Ala Thr Cys Asn Val His Lys Ser Ala Phe
                340                      345                      350
Asn Asp Trp Phe Ser Gly His Leu Asn Phe Gln Ile Glu His His Leu
            355                      360                      365
Phe Pro Thr Met Pro Arg His Asn Tyr His Lys Val Ala Pro Leu Val
        370                      375                      380
Gln Ser Leu Cys Ala Lys His Gly Ile Glu Tyr Gln Ser Lys Pro Leu
385                      390                      395                      400
Leu Ser Ala Phe Ala Asp Ile Ile His Ser Leu Lys Glu Ser Gly Gln
                405                      410                      415
Leu Trp Leu Asp Ala Tyr Leu His Gln
                420                      425


        <210> 1241
        <211> 152
        <212>Amino acid
        <213> Homo sapiens




        <400> 1241
Gln Cys Gly Gly Ile Pro Tyr Asn Thr Thr Gln Phe Leu Met Asn Asp
1               5                   10                  15
Arg Asp Pro Glu Glu Pro Asn Leu Asp Val Pro His Gly Ile Ser His
            20                  25                  30
Pro Gly Ser Ser Gly Glu Ser Glu Ala Gly Asp Ser Asp Gly Arg Gly
        35                  40                  45
Arg Ala His Gly Glu Phe Gln Arg Lys Asp Phe Ser Glu Thr Tyr Glu
    50                  55                  60
Arg Phe His Thr Glu Ser Leu Gln Gly Arg Ser Lys Gln Glu Leu Val
65                  70                  75                  80
Arg Asp Tyr Leu Glu Leu Glu Lys Arg Leu Ser Gln Ala Glu Glu Glu
                85                  90                  95
Thr Arg Arg Leu Gln Gln Leu Gln Ala Cys Thr Gly Gln Gln Ser Cys
            100                 105                 110
Arg Gln Val Glu Glu Leu Ala Ala Glu Val Gln Arg Leu Arg Thr Glu
        115                 120                 125
Asn Gln Arg Leu Arg Gln Glu Asn Gln Met Trp Asn Arg Glu Gly Cys
    130                 135                 140
Arg Cys Asp Glu Glu Pro Gly Thr
145                 150     152


        <210> 1242
        <211> 191
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1242
Ser Pro Glu Arg Ser Ser Leu Ser Val Gly Arg Glu Lys Ala Met Glu
1               5                   10                  15
Val Pro Pro Pro Ala Pro Arg Ser Phe Leu Cys Arg Ala Leu Cys Leu
            20                  25                  30
Phe Pro Arg Val Phe Ala Ala Glu Ala Val Thr Ala Asp Ser Glu Val
        35                  40                  45
Leu Glu Glu Arg Gln Lys Arg Leu Pro Tyr Val Pro Glu Pro Tyr Tyr
    50                  55                  60
Pro Glu Ser Gly Trp Asp Arg Leu Arg Glu Leu Phe Gly Lys Asp Val
65                  70                  75                  80
Thr Gly Ser Leu Phe Arg Ile Asn Val Gly Leu Arg Gly Leu Val Ala
                85                  90                  95
Gly Gly Ile Ile Gly Ala Leu Leu Gly Thr Pro Val Gly Gly Leu Leu
            100                 105                 110
Met Ala Phe Gln Lys Tyr Ser Gly Glu Thr Val Gln Glu Arg Lys Gln
        115                 120                 125
Lys Asp Arg Lys Ala Leu His Glu Leu Lys Leu Glu Glu Trp Lys Gly
    130                 135                 140
Arg Leu Gln Val Thr Glu His Leu Pro Glu Lys Ile Glu Ser Ser Leu
145                 150                 155                 160
Gln Glu Asp Glu Pro Glu Asn Asp Ala Lys Lys Ile Glu Ala Leu Leu
                165                 170                 175
Asn Leu Pro Arg Asn Pro Ser Val Ile Asp Lys Gln Asp Lys Asp
            180                 185                 190 191


        <210> 1243
        <211> 381
        <212>Amino acid
        <213> Homo sapiens




        <400> 1243
Arg Ser Leu Gly Leu Ala Val Thr Glu Met Val Pro Trp Val Arg Thr
1               5                   10                  15
Met Gly Gln Lys Leu Lys Gln Arg Leu Arg Leu Asp Val Gly Arg Glu
            20                  25                  30
Ile Cys Arg Gln Tyr Pro Leu Phe Cys Phe Leu Leu Leu Cys Leu Ser
        35                  40                  45
Ala Ala Ser Leu Leu Leu Asn Arg Tyr Ile His Ile Leu Met Ile Phe
    50                  55                  60
Trp Ser Phe Val Ala Gly Val Val Thr Phe Tyr Cys Ser Leu Gly Pro
65                  70                  75                  80
Asp Ser Leu Leu Pro Asn Ile Phe Phe Thr Ile Lys Tyr Lys Pro Lys
                85                  90                  95
Gln Leu Gly Leu Gln Glu Leu Phe Pro Gln Gly His Ser Cys Ala Val
            100                 105                 110
Cys Gly Lys Val Lys Cys Lys Arg His Arg Pro Ser Leu Leu Leu Glu
        115                 120                 125
Asn Tyr Gln Pro Trp Leu Asp Leu Lys Ile Ser Ser Lys Val Asp Ala
    130                 135                 140
Ser Leu Ser Glu Val Leu Glu Leu Val Leu Glu Asn Phe Val Tyr Pro
145                 150                 155                 160
Trp Tyr Arg Asp Val Thr Asp Asp Glu Ser Phe Val Asp Glu Leu Arg
                165                 170                 175
Ile Thr Leu Arg Phe Phe Ala Ser Val Leu Ile Arg Arg Ile His Lys
            180                 185                 190
Val Asp Ile Pro Ser Ile Ile Thr Lys Lys Leu Leu Lys Ala Ala Met
```

```
          195                     200                     205
Lys His Ile Glu Val Ile Val Lys Ala Arg Gln Lys Val Lys Asn Thr
    210                     215                     220
Glu Phe Leu Gln Gln Ala Ala Leu Glu Glu Tyr Gly Pro Glu Leu His
225                     230                     235                     240
Val Ala Leu Arg Ser Arg Arg Asp Glu Leu His Tyr Leu Arg Lys Leu
            245                     250                     255
Thr Glu Leu Leu Phe Pro Tyr Ile Leu Pro Pro Lys Ala Thr Asp Cys
        260                     265                     270
Arg Ser Leu Thr Leu Leu Ile Arg Glu Ile Leu Ser Gly Ser Val Phe
    275                     280                     285
Leu Pro Ser Leu Asp Phe Leu Ala Asp Pro Asp Thr Val Asn His Leu
    290                     295                     300
Leu Ile Ile Phe Ile Asp Asp Ser Pro Pro Glu Lys Ala Thr Glu Pro
305                     310                     315                     320
Ala Ser Pro Leu Val Pro Phe Leu Gln Lys Phe Ala Glu Pro Arg Asn
            325                     330                     335
Lys Lys Pro Ser Val Leu Lys Leu Glu Leu Lys Gln Ile Arg Glu Gln
        340                     345                     350
Gln Asp Leu Leu Phe Arg Phe Met Asn Phe Leu Lys Gln Glu Gly Ala
    355                     360                     365
Val His Val Leu His Val Leu Phe Asp Cys Gly Gly Ile
370                     375                     380 381
```

<210> 1244
<211> 371
<212>Amino acid
<213> Homo sapiens

<400> 1244

```
Gln Ser Leu Ala Glu Val Leu Gln Gln Leu Gly Ala Ser Ser Glu Leu
1                   5                   10                  15
Gln Ala Val Leu Ser Tyr Ile Phe Pro Thr Tyr Gly Val Thr Pro Asn
            20                  25                  30
His Ser Ala Phe Ser Met His Ala Leu Leu Val Asn His Tyr Met Lys
        35                  40                  45
Gly Gly Phe Tyr Pro Arg Gly Val Thr Ser Glu Ile Ala Phe His Thr
    50                  55                  60
Ile Pro Val Ile Gln Arg Ala Gly Gly Ala Val Leu Thr Lys Ala Thr
65                  70                  75                  80
Val Gln Ser Val Leu Leu Asp Ser Ala Gly Lys Ala Cys Gly Val Ser
                85                  90                  95
Val Lys Lys Gly His Glu Leu Val Asn Ile Tyr Cys Pro Ile Val Val
            100                 105                 110
Ser Asn Ala Gly Leu Phe Asn Thr Tyr Glu His Leu Leu Pro Gly Asn
        115                 120                 125
Ala Arg Cys Leu Pro Gly Val Lys Gln Gln Leu Gly Thr Val Arg Pro
    130                 135                 140
Gly Leu Gly Met Thr Ser Val Phe Ile Cys Leu Arg Gly Thr Lys Glu
145                 150                 155                 160
Asp Leu His Leu Pro Ser Thr Asn Tyr Tyr Val Tyr Tyr Asp Thr Asp
            165                 170                 175
Met Asp Gln Ala Met Glu Arg Tyr Val Ser Met Pro Arg Glu Glu Ala
        180                 185                 190
Ala Glu His Ile Pro Leu Leu Phe Phe Ala Phe Pro Ser Ala Lys Asp
    195                 200                 205
Pro Thr Trp Glu Asp Arg Phe Pro Gly Arg Ser Thr Met Ile Met Leu
    210                 215                 220
Ile Pro Thr Ala Tyr Glu Trp Phe Glu Glu Trp Gln Ala Glu Leu Lys
```

```
225                230                 235                240
Gly Lys Arg Gly Ser Asp Tyr Glu Thr Phe Lys Asn Ser Phe Val Glu
            245                 250                 255
Ala Ser Met Ser Val Val Leu Lys Leu Phe Pro Gln Leu Glu Gly Lys
            260                 265                 270
Val Glu Ser Val Thr Ala Gly Ser Pro Leu Thr Asn Gln Phe Tyr Leu
            275                 280                 285
Ala Ala Pro Arg Gly Ala Cys Tyr Gly Ala Asp His Asp Leu Gly Arg
            290                 295                 300
Leu His Pro Cys Val Met Ala Ser Leu Arg Ala Gln Ser Pro Ile Pro
305                 310                 315                320
Asn Leu Tyr Leu Thr Gly Gln Asp Ile Phe Thr Cys Gly Leu Val Gly
            325                 330                 335
Ala Leu Gln Gly Ala Leu Leu Cys Ser Ser Thr Ile Leu Lys Arg Asn
            340                 345                 350
Leu Tyr Ser Asp Leu Lys Asn Leu Asp Ser Arg Ile Arg Ala Gln Lys
            355                 360                 365
Lys Lys Asn
370 371
```

```
<210> 1245
<211> 295
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1245
Arg Pro Gln Glu Thr Arg Val Leu Gln Val Ser Cys Gly Arg Ala His
1               5                   10                  15
Ser Leu Val Leu Thr Asp Arg Glu Gly Val Phe Ser Met Gly Asn Asn
            20                  25                  30
Ser Tyr Gly Gln Cys Gly Arg Lys Val Val Glu Asn Glu Ile Tyr Ser
        35                  40                  45
Glu Ser His Arg Val His Arg Met Gln Asp Phe Asp Gly Gln Val Val
    50                  55                  60
Gln Val Ala Cys Gly Gln Asp His Ser Leu Phe Leu Thr Asp Lys Gly
65                  70                  75                  80
Glu Val Tyr Ser Cys Gly Trp Gly Ala Asp Gly Gln Thr Gly Leu Gly
            85                  90                  95
His Tyr Asn Ile Thr Ser Ser Pro Thr Lys Leu Gly Gly Asp Leu Ala
        100                 105                 110
Gly Val Asn Val Ile Gln Val Ala Thr Tyr Gly Asp Cys Cys Leu Ala
        115                 120                 125
Val Ser Ala Asp Gly Gly Leu Phe Gly Trp Gly Asn Ser Glu Tyr Leu
    130                 135                 140
Gln Leu Ala Ser Val Thr Asp Ser Thr Gln Val Asn Val Pro Arg Cys
145                 150                 155                 160
Leu His Phe Ser Gly Val Gly Lys Val Arg Gln Ala Ala Cys Gly Gly
            165                 170                 175
Thr Gly Cys Ala Val Leu Asn Gly Glu Gly His Val Phe Val Trp Gly
        180                 185                 190
Tyr Gly Ile Leu Gly Lys Gly Pro Asn Leu Val Glu Ser Ala Val Pro
    195                 200                 205
Glu Met Ile Pro Pro Thr Leu Phe Gly Leu Thr Glu Phe Asn Pro Glu
    210                 215                 220
Ile Gln Val Ser Arg Ile Arg Cys Gly Leu Ser His Phe Ala Ala Leu
225                 230                 235                 240
Thr Asn Lys Gly Glu Leu Phe Val Trp Gly Lys Asn Ile Arg Gly Cys
            245                 250                 255
Leu Gly Ile Gly Arg Leu Glu Asp Gln Tyr Phe Pro Trp Arg Val Thr
```

```
                260                    265                    270
Met Pro Gly Glu Pro Val Asp Val Ala Cys Gly Val Asp His Met Val
        275                    280                    285
Thr Leu Ala Lys Ser Phe Ile
    290                    295


        <210> 1246
        <211> 172
        <212>Amino acid
        <213> Homo sapiens




        <400> 1246
Leu Pro Phe Arg Glu Trp Leu Met Ile Val Val Ser Leu Ser Ala Ala
  1               5                   10                  15
Ala Val Ala Ala Ala Phe Met Ala Lys Cys Arg Met Val Leu Ser Ser
            20                  25                  30
Arg Tyr Phe Cys Ser His Phe Val Met Ser Ala Ser Arg Ala Arg Ile
        35                  40                  45
Arg Ser Ser Phe Ser Arg Thr Ser Ser Arg Arg Ala Gly Ala Leu Tyr
    50                  55                  60
Ser Gly Met Leu Ala Gly Trp Pro Phe Pro Cys Phe Cys Trp Val Leu
65                  70                  75                  80
Ser Ala Ser Ser Ser Leu Ser Ser Gln Val Arg Ser Leu Arg Ser Ile
            85                  90                  95
Cys Ser Arg Phe Ser His Ala Asp Cys Ser Trp Val Arg Ala Cys Cys
            100                 105                 110
Ser Phe Ser Thr Phe Ser Thr Tyr Ala Cys Phe Ser Arg Asn Ser Ser
    115                 120                 125
Ser Ser Leu Met Thr Leu Ala Trp Ala Leu Leu Lys Ala Trp Ser Arg
    130                 135                 140
Ile Ser Met Cys Leu Arg Trp Ser Ser Leu Ala Val Arg Thr Ala Ala
145                 150                 155                 160
Asn Ser Ile Ser Asn Phe Ser Phe Ser Phe Lys Asn
            165                 170     172


        <210> 1247
        <211> 361
        <212>Amino acid
        <213> Homo sapiens




        <400> 1247
Met Gln Ala Val Arg Ala Thr Ala Ser Gln Ser Leu Ser Cys Ala Arg
  1               5                   10                  15
Ala Pro Arg Glu Pro Thr Gln His Ala Leu Arg Ala His Trp Phe Pro
            20                  25                  30
Pro Ala Ala Ala Val Gln Pro Ser Pro His Ser Gly Val Ala Ala Ala
        35                  40                  45
Ala Gly Thr Trp Ser Ser Ala Phe Arg Gly Glu His Pro Leu Val Ser
    50                  55                  60
Ser Gly Leu Leu Leu Gly Val Arg Glu Gln Ser Phe Arg Leu Leu Arg
65                  70                  75                  80
Ser Lys Ala Gly Thr His Met Tyr Leu Glu His Thr Ser His Cys Pro
            85                  90                  95
His His Asp Asp Asp Thr Ala Met Asp Thr Pro Leu Pro Arg Pro Arg
```

755

```
           100                    105                    110
Pro Leu Leu Ala Val Glu Arg Thr Gly Gln Arg Pro Leu Trp Ala Pro
        115                    120                    125
Ser Leu Glu Leu Pro Lys Pro Asp Met Gln Pro Leu Pro Ala Gly Ala
        130                    135                    140
Phe Leu Glu Glu Val Ala Glu Gly Thr Pro Ala Gln Thr Glu Ser Glu
145                    150                    155                    160
Pro Lys Val Leu Asp Pro Glu Glu Asp Leu Leu Cys Ile Ala Lys Thr
                165                    170                    175
Phe Ser Tyr Leu Arg Glu Ser Gly Trp Tyr Trp Gly Ser Ile Thr Ala
        180                    185                    190
Ser Glu Ala Arg Gln His Leu Gln Lys Met Pro Glu Gly Thr Phe Leu
        195                    200                    205
Val Arg Asp Ser Thr His Pro Ser Tyr Leu Phe Thr Leu Ser Val Lys
210                    215                    220
Thr Thr Arg Gly Pro Thr Asn Val Arg Ile Glu Tyr Ala Asp Ser Ser
225                    230                    235                    240
Phe Arg Leu Asp Ser Asn Cys Leu Ser Arg Pro Arg Ile Leu Ala Phe
                245                    250                    255
Pro Asp Val Val Ser Leu Val Gln His Tyr Val Ala Ser Cys Thr Ala
                260                    265                    270
Asp Thr Arg Ser Asp Ser Pro Asp Pro Ala Pro Thr Pro Ala Leu Pro
        275                    280                    285
Met Pro Lys Glu Asp Ala Pro Ser Asp Pro Ala Leu Pro Ala Pro Pro
        290                    295                    300
Pro Ala Thr Ala Val His Leu Lys Leu Val Gln Pro Phe Val Arg Arg
305                    310                    315                    320
Ser Ser Ala Arg Ser Leu Gln His Leu Cys Arg Leu Val Ile Asn Arg
                325                    330                    335
Leu Val Ala Asp Val Asp Cys Leu Pro Leu Pro Arg Arg Met Ala Asp
                340                    345                    350
Tyr Leu Arg Gln Tyr Pro Phe Gln Leu
        355                    360 361
```

```
        <210> 1248
        <211> 279
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 1248
Phe Val Asp Ile Phe Gln Arg Trp Lys Glu Cys Arg Gly Lys Ser Pro
 1               5                    10                    15
Ala Gln Ala Glu Leu Ser Tyr Leu Asn Lys Ala Lys Trp Leu Glu Met
            20                    25                    30
Tyr Gly Val Asp Met His Val Val Arg Gly Arg Asp Gly Cys Glu Tyr
        35                    40                    45
Ser Leu Gly Leu Thr Pro Thr Gly Ile Leu Ile Phe Glu Gly Ala Asn
    50                    55                    60
Lys Ile Gly Leu Phe Phe Trp Pro Lys Ile Thr Lys Met Asp Phe Lys
65                    70                    75                    80
Lys Ser Lys Leu Thr Leu Val Val Val Glu Asp Asp Asp Gln Gly Arg
                85                    90                    95
Glu Gln Glu His Thr Phe Val Phe Arg Leu Asp Ser Ala Arg Thr Cys
            100                    105                    110
Lys His Leu Trp Lys Cys Ala Val Glu His His Ala Phe Phe Arg Leu
        115                    120                    125
Arg Thr Pro Gly Asn Ser Lys Ser Asn Arg Ser Asp Phe Ile Arg Leu
    130                    135                    140
Gly Ser Arg Phe Arg Phe Ser Gly Arg Thr Glu Tyr Gln Ala Thr His
```

```
145                     150                     155                     160
Gly Ser Arg Leu Arg Arg Thr Ser Thr Phe Glu Arg Lys Pro Ser Lys
                165                     170                     175
Arg Tyr Pro Ser Arg Arg His Ser Thr Phe Lys Ala Ser Asn Pro Val
                180                     185                     190
Ile Ala Ala Gln Leu Cys Ser Lys Thr Asn Pro Glu Val His Asn Tyr
                195                     200                     205
Gln Pro Gln Tyr His Pro Asn Ile His Pro Ser Gln Pro Arg Trp His
210                     215                     220
Pro His Ser Pro Asn Val Arg Pro Ser Phe Gln Asp Asp Arg Ser His
225                     230                     235                     240
Trp Lys Ala Ser Ala Ser Gly Asp Asp Ser His Phe Asp Tyr Val His
                245                     250                     255
Asp Gln Asn Gln Lys Asn Leu Gly Gly Met Gln Ser Met Met Tyr Arg
                260                     265                     270
Asp Lys Leu Met Thr Ala Leu
                275                     279
```

```
<210> 1249
<211> 255
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(255)
<223> X = any amino acid or stop code
```

```
        <400> 1249
Gly Gly Ile Arg Leu Ile Gln Lys Leu Thr Trp Arg Ser Arg Gln Gln
 1               5                      10                      15
Asp Arg Glu Asn Cys Ala Met Lys Gly Lys His Lys Asp Glu Cys His
                20                      25                      30
Asn Phe Ile Lys Val Phe Val Pro Arg Asn Asp Glu Met Val Phe Val
        35                      40                      45
Cys Gly Thr Asn Ala Phe Asn Pro Met Cys Arg Tyr Tyr Arg Val Ser
        50                      55                      60
Ile Phe Tyr Val Ile Cys Phe Xaa Ser Thr Phe Leu Pro Ser Leu
65                      70                      75                      80
Ile Cys Cys Xaa Ser Xaa Asn Leu Ser Ala Phe Gln Xaa Phe Val Leu
                85                      90                      95
Ser Leu Val Gln Xaa Lys Asn Lys Asp Arg Ile Leu Gln Met Glu Phe
                100                     105                     110
Xaa Tyr Lys Xaa Asn Ser Ile Ala Phe Lys Arg Ala Arg Xaa Ile Asp
        115                     120                     125
Met Thr Leu Ala Ile Tyr Phe Ser Phe Val Leu Ser Thr Leu Xaa Tyr
        130                     135                     140
Asp Gly Glu Glu Ile Ser Gly Leu Ala Arg Cys Pro Phe Asp Ala Arg
145                     150                     155                     160
Gln Thr Asn Gly Ala Leu Phe Ala Asp Gly Lys Leu Tyr Ser Ala Thr
                165                     170                     175
Val Ala Asp Phe Leu Ala Ser Asp Ala Val Ile Tyr Arg Ser Met Gly
                180                     185                     190
Asp Gly Ser Ala Leu Arg Thr Ile Lys Tyr Asp Ser Lys Trp Ile Lys
        195                     200                     205
Glu Pro His Phe Leu Tyr Ala Ile Lys Tyr Gly Asn Tyr Val Tyr Phe
        210                     215                     220
Ser Phe Arg Glu Ile Val Ala Thr Xaa Xaa Leu Gly Lys Ala Val Asp
225                     230                     235                     240
```

```
Ser Arg Val Ala Arg Tyr Glu Lys Gln Leu Val Gly Pro Thr Val
              245             250             255
```

```
        <210> 1250
        <211> 307
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1250
Ala Arg Ala Leu Ala Arg Glu Arg Glu Ser Glu Ser Ala Arg Ala Asp
1               5               10              15
Asp Val Thr Leu Gly Val Ser Ala Ile Leu Ala Val Asp Arg Gly Gly
            20              25              30
Asn Leu Gly Ser Ala Asp Gly Trp Ala Tyr Ile Asp Val Glu Val Arg
        35              40              45
Arg Pro Trp Ala Phe Val Gly Pro Gly Cys Ser Arg Ser Ser Gly Asn
    50              55                  60
Gly Ser Thr Ala Tyr Gly Leu Val Gly Ser Pro Arg Trp Leu Ser Pro
65              70              75                  80
Phe His Thr Gly Gly Ala Val Ser Leu Pro Arg Arg Pro Arg Gly Pro
            85              90              95
Gly Pro Val Leu Gly Val Ala Arg Pro Cys Leu Arg Cys Val Leu Arg
            100             105             110
Pro Glu His Tyr Glu Pro Gly Ser His Tyr Ser Gly Phe Ala Gly Arg
        115             120             125
Asp Ala Ser Arg Ala Phe Val Thr Gly Asp Cys Ser Glu Ala Gly Leu
    130             135             140
Val Asp Asp Val Ser Asp Leu Ser Ala Ala Glu Met Leu Thr Leu His
145             150             155             160
Asn Trp Leu Ser Phe Tyr Glu Lys Asn Tyr Val Cys Val Gly Arg Val
            165             170             175
Thr Gly Arg Phe Tyr Gly Glu Asp Gly Leu Pro Thr Pro Ala Leu Thr
        180             185             190
Gln Val Glu Ala Ala Ile Thr Arg Gly Leu Glu Ala Asn Lys Leu Gln
        195             200             205
Leu Gln Glu Lys Gln Thr Phe Pro Pro Cys Asn Ala Glu Trp Ser Ser
    210             215             220
Ala Arg Gly Ser Arg Leu Trp Cys Ser Gln Lys Ser Gly Gly Val Ser
225             230             235             240
Arg Asp Trp Ile Gly Val Pro Arg Lys Leu Tyr Lys Pro Gly Ala Lys
            245             250             255
Glu Pro Arg Cys Val Cys Val Arg Thr Thr Gly Pro Pro Ser Gly Gln
            260             265             270
Met Pro Asp Asn Pro Pro His Arg Asn Arg Gly Asp Leu Asp His Pro
        275             280             285
Asn Leu Ala Glu Tyr Thr Gly Cys Pro Pro Leu Ala Ile Thr Cys Ser
    290             295             300
Phe Pro Leu
305     307
```

```
        <210> 1251
        <211> 100
        <212>Amino acid
        <213> Homo sapiens
```

```
      <400> 1251
Tyr Phe Ile Ile Cys Arg Asp Gly Val Leu Leu Phe Cys Pro Gly Trp
 1               5                   10                  15
Ser Gln Thr Pro Gly Ala Gln Ala Ile Leu Leu His Trp Ala Thr Gln
              20                  25                  30
Asn Ala Gly Met Thr Asp Met Ser His Ser Ala Gln Pro Ile Tyr Leu
         35                  40                  45
Phe Ile Tyr Leu Ile Arg Thr Arg Ser His Tyr Val Ala Gln Ala Gly
     50                  55                  60
Gln Leu Leu Asp Ser Asn Asp Ser Pro Asn Val Ala Ser Gln Asn Val
 65               70                  75                  80
Gly Ile Thr Gly Met Ser His His Ala Trp Leu Lys Ile Val Leu Tyr
                 85                  90                  95
Phe Cys Ile Ile
             100


      <210> 1252
      <211> 464
      <212>Amino acid
      <213> Homo sapiens



      <400> 1252
Pro Ala Ala Arg Pro Pro Ser Leu Val Arg Leu Ser Pro Ser Pro Pro
 1               5                   10                  15
Lys Pro Arg Ala Arg Ala Arg Ala Pro Gln Ser Val Glu Pro Ala Ala
              20                  25                  30
Pro Leu Val Ala Arg Gly Ser Ser Pro Pro Ala Arg Pro Ala Pro Ala
         35                  40                  45
Met Val Arg Pro Arg Arg Ala Pro Tyr Arg Ser Gly Ala Gly Gly Pro
     50                  55                  60
Leu Gly Gly Arg Gly Arg Pro Pro Arg Pro Leu Val Val Arg Ala Val
 65               70                  75                  80
Arg Ser Arg Ser Trp Pro Ala Ser Pro Arg Gly Pro Gln Pro Pro Arg
                 85                  90                  95
Ile Arg Ala Arg Ser Ala Pro Pro Met Glu Gly Ala Arg Val Phe Gly
             100                 105                 110
Ala Leu Gly Pro Ile Gly Pro Ser Ser Pro Gly Leu Thr Leu Gly Gly
         115                 120                 125
Leu Ala Val Ser Glu His Arg Leu Ser Asn Lys Leu Leu Ala Trp Ser
     130                 135                 140
Gly Val Leu Glu Trp Gln Glu Lys Arg Arg Pro Tyr Ser Asp Ser Thr
145                 150                 155                 160
Ala Lys Leu Lys Arg Thr Leu Pro Cys Gln Ala Tyr Val Asn Gln Gly
                 165                 170                 175
Glu Asn Leu Glu Thr Asp Gln Trp Pro Gln Lys Leu Ile Met Gln Leu
             180                 185                 190
Ile Pro Gln Gln Leu Leu Thr Thr Leu Gly Pro Leu Phe Arg Asn Ser
         195                 200                 205
Gln Leu Ala Gln Phe His Phe Thr Asn Arg Asp Cys Asp Ser Leu Lys
     210                 215                 220
Gly Leu Cys Arg Ile Met Gly Asn Gly Phe Ala Gly Cys Met Leu Phe
225                 230                 235                 240
Pro His Ile Ser Pro Cys Glu Val Arg Val Leu Met Leu Leu Tyr Ser
                 245                 250                 255
Ser Lys Lys Lys Ile Phe Met Gly Leu Ile Pro Tyr Asp Gln Ser Gly
             260                 265                 270
Phe Val Ser Ala Ile Arg Gln Val Ile Thr Thr Arg Lys Gln Ala Val
         275                 280                 285
```

759

```
Gly Pro Gly Gly Val Asn Ser Gly Pro Val Gln Ile Val Asn Asn Lys
    290                     295                 300
Phe Leu Ala Trp Ser Gly Val Met Glu Trp Gln Glu Pro Arg Pro Glu
305                     310                 315                 320
Pro Asn Ser Arg Ser Lys Arg Trp Leu Pro Ser His Val Tyr Val Asn
            325                 330                 335
Gln Gly Glu Ile Leu Arg Thr Glu Gln Trp Pro Arg Lys Leu Tyr Met
            340                 345                 350
Gln Leu Ile Pro Gln Gln Leu Leu Thr Thr Leu Val Pro Leu Phe Arg
            355                 360                 365
Asn Ser Arg Leu Val Gln Phe His Phe Thr Lys Asp Leu Glu Thr Leu
    370                 375                 380
Lys Ser Leu Cys Arg Ile Met Asp Asn Gly Phe Ala Gly Cys Val His
385                 390                 395                 400
Phe Ser Tyr Lys Ala Ser Cys Glu Ile Arg Val Leu Met Leu Leu Tyr
            405                 410                 415
Ser Ser Glu Lys Lys Ile Phe Ile Gly Leu Ile Pro His Asp Gln Gly
            420                 425                 430
Asn Phe Val Asn Gly Ile Arg Arg Val Ile Ala Asn Gln Gln Gln Val
            435                 440                 445
Leu Gln Arg Asn Leu Glu Gln Glu Gln Gln Arg Gly Met Gly Gly
    450                 455                 460             464
```

<210> 1253
<211> 214
<212>Amino acid
<213> Homo sapiens

<400> 1253

```
Gly Arg Pro Ala Leu Gly Arg Glu Ala Pro Pro Gln Ala Gly Leu Ser
1               5               10                  15
Ser Thr Pro Pro Pro Cys Ser Glu Thr Cys Thr Met Gly Pro His Ser
            20                  25                  30
Ile Leu Arg Thr Val His Cys Arg Pro Thr Lys Thr Pro Pro Glu Pro
        35                  40                  45
Ser Ala Glu Pro His Pro Leu Ser Leu Leu Thr Ser Ser Asn Thr Ser
    50                  55                  60
Leu Ala Gly Thr Ser Leu Gly Arg Asp Leu Thr Pro Gly Gly Gly Lys
65                  70                  75                  80
Pro Pro Ser Gly Gln Thr Pro Arg Asn Pro Glu Ser Pro Arg His Arg
                85                  90                  95
Leu Gly Ser Pro Arg Gly Arg Arg Trp Leu Ala Ser Pro Thr Pro Thr
            100                 105                 110
Gly Ser Gly Arg Ser Gly Pro Ala Ser Arg Gly Gln Arg Arg Leu Ser
    115                 120                 125
Cys Ala Ala Gln Asp Pro Thr Ser Glu Gly Ala Ser Val Gly Ala Met
    130                 135                 140
Glu Ala Gly Leu Gly Pro Pro Thr Ala Ala Pro Arg Gly Val Val Ser
145                 150                 155                 160
Glu Ala Ala Glu Ser Leu Gly Gly Thr Leu Ser Trp Gly Ala Trp Gly
                165                 170                 175
Arg Pro Pro Ala Gly Pro Ser Gly Leu Ala Gly Arg Arg Ser Arg Arg
            180                 185                 190
Glu Ala Leu Arg Pro Asp Arg Lys Glu Ala Ser Val Met Met Ala Ala
        195                 200                 205
Val Ser Ala Ile Gln Pro
    210             214
```

```
<210> 1254
<211> 198
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(198)
<223> X = any amino acid or stop code
```

```
<400> 1254
Pro Gly Val Pro Thr His Gly Trp Pro Arg Ser Arg Val Leu Thr Arg
 1               5                   10                  15
Val Arg Gly Ser Arg Gly Ser Gly Lys Met Ala Ala Ala Val Val Leu
               20                  25                  30
Ala Ala Gly Leu Arg Ala Ala Arg Arg Ala Val Ala Ala Thr Gly Val
           35                  40                  45
Arg Gly Gly Gln Val Arg Gly Ala Ala Gly Val Thr Asp Gly Asn Glu
       50                  55                  60
Val Ala Lys Ala Gln Gln Ala Thr Pro Gly Gly Ala Ala Pro Thr Ile
 65                  70                  75                  80
Phe Ser Arg Ile Leu Asp Lys Ser Leu Pro Ala Asp Ile Leu Tyr Glu
               85                  90                  95
Asp Gln Gln Cys Leu Val Phe Arg Asp Val Ala Pro Gln Ala Pro Val
               100                 105                 110
His Phe Leu Val Ile Pro Lys Lys Pro Ile Pro Arg Ile Ser Gln Ala
           115                 120                 125
Glu Glu Glu Asp Gln Gln Leu Thr Tyr Val Pro Pro Leu Ser Leu Xaa
       130                 135                 140
Leu Leu Gly His Leu Leu Leu Val Ala Lys Gln Thr Ala Lys Ala Glu
 145                 150                 155                 160
Gly Leu Gly Asp Gly Tyr Arg Leu Val Ile Asn Asp Gly Lys Leu Gly
               165                 170                 175
Ala Gln Ser Val Tyr His Leu His Ile His Val Leu Gly Gly Arg Gln
               180                 185                 190
Leu Gln Trp Pro Pro Gly
       195         198
```

```
<210> 1255
<211> 458
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(458)
<223> X = any amino acid or stop code
```

```
<400> 1255
Val Pro Asn Tyr Leu Pro Ser Val Ser Ser Ala Ile Gly Gly Glu Val
 1               5                   10                  15
Pro Gln Arg Tyr Val Trp Arg Phe Cys Ile Gly Leu His Ser Ala Pro
               20                  25                  30
```

Arg Phe Leu Val Ala Phe Ala Tyr Trp Asn His Tyr Leu Ser Cys Thr
        35   40   45
Ser Pro Cys Ser Cys Tyr Arg Pro Leu Cys Arg Leu Asn Phe Gly Leu
        50   55   60
Asn Val Val Glu Asn Leu Ala Leu Leu Val Leu Thr Tyr Val Ser Ser
65   70   75   80
Ser Glu Asp Phe Thr Trp Val Pro Gly Xaa Gly Arg Ser Gly Glu Val
                85   90   95
Phe Pro Glu Gly Thr Gly Leu Pro Leu Pro His Ser Asp Leu Pro Thr
            100   105   110
Ser Trp Cys Gly His Ser Leu Gln Cys Gly Ser Gln Ser Ser Phe Pro
        115   120   125
Pro Ala Ile His Glu Asn Ala Phe Ile Val Phe Ile Ala Ser Ser Leu
        130   135   140
Gly His Met Leu Leu Thr Cys Ile Leu Trp Arg Leu Thr Lys Lys His
145   150   155   160
Thr Val Ser Gln Glu Asp Gly Leu Ser Leu Ala Gly Ala Pro Arg Gln
                165   170   175
Pro Arg Arg Lys Ser Arg Thr Ser Val Leu Arg Ile Arg Val Met Val
            180   185   190
Arg Trp Glu Leu Ser Ser Asn Gly Asn Pro Gly Arg Gly Val Leu Gly
        195   200   205
Leu Gly Leu Gly Leu Gly Asn Lys Leu Arg Val Val Gly Gln Asn Leu
    210   215   220
Gly Leu Xaa His Cys Val Trp Val Val Trp Glu Thr Gly Glu Xaa Lys
225   230   235   240
Arg Trp Arg Leu Gln Met Gly Ile Glu Xaa Gly Val Ala Ser Arg Arg
            245   250   255
Gln Xaa Val Arg Asn Ser Val Arg Gly Leu Val Cys His Asn Ser Ser
        260   265   270
Ala Pro Pro Met Tyr Met Gly Phe Phe Ser Pro Thr Val Phe Gly Gly
        275   280   285
Gly Val Gly Gly Xaa Leu His Val Thr Phe Ile Leu His Pro Pro Glu
    290   295   300
Val Glu Ala Ala Gly Ile Pro Leu Leu Leu Gly Pro Ser Leu Pro Gln
305   310   315   320
Arg Gln Gly Arg Glu His Ile Val Val Ile Leu Ala Ala Pro Ala Cys
            325   330   335
Ala Pro Phe His Asp Arg Xaa Trp Glu Pro Arg Glu Ile Arg Pro Ser
            340   345   350
Pro Xaa Glu Leu Gly Leu Arg Gly Glu Pro Thr Leu Ser Tyr Pro Ala
        355   360   365
Ser Cys Arg Val Ile Arg Gln Pro Ile Pro Xaa Asp Arg Lys Ser Tyr
    370   375   380
Ser Trp Lys Gln Arg Leu Phe Ile Ile Asn Phe Ile Ser Phe Phe Ser
385   390   395   400
Ala Leu Ala Val Tyr Phe Arg His Asn Met Tyr Cys Glu Ala Gly Val
            405   410   415
Tyr Thr Ile Phe Ala Ile Leu Glu Tyr Thr Val Val Leu Thr Asn Met
            420   425   430
Ala Phe His Met Thr Ala Trp Trp Asp Phe Gly Asn Lys Glu Leu Leu
        435   440   445
Ile Thr Ser Gln Pro Glu Glu Lys Arg Phe
    450   455   458

    <210> 1256
    <211> 83
    <212>Amino acid
    <213> Homo sapiens

762

<400> 1256

Ile Asp Leu Leu Glu Ile Arg Asn Gly Pro Arg Ser His Glu Ser Phe
1   5   10   15
Gln Glu Met Asp Leu Asn Asp Asp Trp Lys Leu Ser Lys Asp Glu Val
            20   25   30
Lys Ala Tyr Leu Lys Lys Glu Phe Glu Lys His Gly Ala Val Val Asn
            35   40   45
Glu Ser His His Asp Ala Leu Val Glu Asp Ile Phe Asp Lys Glu Asp
            50   55   60
Glu Asp Lys Asp Gly Phe Ile Ser Ala Arg Glu Phe Thr Tyr Lys His
65   70   75   80
Asp Glu Leu
            83

<210> 1257
<211> 203
<212>Amino acid
<213> Homo sapiens

<400> 1257

Pro Arg Val Arg Gly Arg Val Gly Lys Glu Gly Ala Ala Ala Lys Pro
1   5   10   15
Arg Ser Leu Leu Arg Arg Phe Gln Leu Leu Ser Trp Ser Val Cys Gly
            20   25   30
Gly Asn Lys Asp Pro Trp Val Gln Glu Leu Met Ser Cys Leu Asp Leu
            35   40   45
Lys Glu Cys Gly His Ala Tyr Ser Gly Ile Val Ala His Gln Lys His
            50   55   60
Leu Leu Pro Thr Ser Pro Pro Ile Ser Gln Ala Ser Glu Gly Ala Ser
65   70   75   80
Ser Asp Ile His Thr Pro Ala Gln Met Leu Leu Ser Thr Leu Gln Ser
                    85   90   95
Thr Gln Arg Pro Thr Leu Pro Val Gly Ser Leu Ser Ser Asp Lys Glu
            100   105   110
Leu Thr Arg Pro Asn Glu Thr Thr Ile His Thr Ala Gly His Ser Leu
            115   120   125
Ala Ala Gly Pro Glu Ala Gly Glu Asn Gln Lys Gln Pro Glu Lys Asn
    130   135   140
Ala Gly Pro Thr Ala Arg Thr Ser Ala Thr Val Pro Val Leu Cys Leu
145   150   155   160
Leu Ala Ile Ile Phe Ile Leu Thr Ala Ala Leu Ser Tyr Val Leu Cys
                165   170   175
Lys Arg Arg Arg Gly Gln Ser Pro Gln Ser Ser Pro Asp Leu Pro Val
            180   185   190
His Tyr Ile Pro Val Ala Pro Asp Ser Asn Thr
            195   200   203

<210> 1258
<211> 195
<212>Amino acid
<213> Homo sapiens

<400> 1258

```
Leu Ile Ile Ser Asn Phe Leu Lys Ala Lys Gln Lys Pro Gly Ser Thr
 1               5                   10                  15
Pro Asn Leu Gln Gln Lys Lys Ser Gln Ala Arg Leu Ala Pro Asp Ile
            20                  25                  30
Val Ser Ala Ser Gln Tyr Arg Lys Phe Asp Glu Phe Gln Thr Gly Ile
        35                  40                  45
Leu Ile Tyr Glu Leu Leu His Gln Pro Asn Pro Phe Glu Val Arg Ala
    50                  55                  60
Gln Leu Arg Glu Arg Asp Tyr Arg Gln Glu Asp Leu Pro Pro Leu Pro
65                  70                  75                  80
Ala Leu Ser Leu Tyr Ser Pro Gly Leu Gln Gln Leu Ala His Leu Leu
                85                  90                  95
Leu Glu Ala Asp Pro Ile Lys Arg Ile Arg Ile Gly Glu Ala Lys Arg
            100                 105                 110
Val Leu Gln Cys Leu Leu Trp Gly Pro Arg Arg Glu Leu Val Gln Gln
        115                 120                 125
Pro Gly Thr Ser Glu Glu Ala Leu Cys Gly Thr Leu His Asn Trp Ile
    130                 135                 140
Asp Met Lys Arg Ala Leu Met Met Met Lys Phe Ala Glu Lys Ala Val
145                 150                 155                 160
Asp Arg Arg Arg Gly Val Glu Leu Glu Asp Trp Leu Cys Cys Gln Tyr
                165                 170                 175
Leu Ala Ser Ala Glu Pro Gly Ala Leu Leu Gln Ser Leu Lys Leu Leu
            180                 185                 190
Gln Leu Leu
        195
```

```
<210> 1259
<211> 672
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(672)
<223> X = any amino acid or stop code
```

```
<400> 1259
Lys Arg Gly Leu Ile Val Val Met Ala His Glu Met Ile Gly Thr Gln
 1               5                   10                  15
Ile Val Thr Glu Arg Gly Val Ala Leu Leu Glu Ser Gly Thr Glu Lys
            20                  25                  30
Val Leu Leu Ile Asp Ser Arg Pro Phe Val Glu Tyr Asn Thr Ser His
        35                  40                  45
Ile Leu Glu Ala Ile Asn Ile Asn Cys Ser Lys Leu Met Lys Arg Arg
    50                  55                  60
Leu Gln Gln Asp Lys Val Leu Ile Thr Glu Leu Ile Gln His Ser Ala
65                  70                  75                  80
Lys His Lys Val Asp Ile Asp Cys Ser Gln Lys Val Val Val Tyr Asp
                85                  90                  95
Gln Ser Ser Gln Asp Val Ala Ser Leu Ser Ser Asp Cys Phe Leu Thr
            100                 105                 110
Val Leu Leu Gly Lys Leu Glu Lys Ser Phe Asn Ser Val His Leu Leu
        115                 120                 125
Ala Gly Gly Phe Ala Glu Phe Ser Arg Cys Phe Pro Gly Leu Cys Glu
    130                 135                 140
Gly Lys Ser Thr Leu Val Pro Thr Cys Ile Ser Gln Pro Cys Leu Pro
145                 150                 155                 160
Val Ala Asn Ile Gly Pro Thr Arg Ile Leu Pro Asn Leu Tyr Leu Gly
```

```
                        165                    170                    175
Cys Gln Arg Asp Val Leu Asn Lys Glu Leu Met Gln Gln Asn Gly Ile
            180                    185                    190
Gly Tyr Val Leu Asn Ala Ser Asn Thr Cys Pro Lys Pro Asp Phe Ile
            195                    200                    205
Pro Glu Ser His Phe Leu Arg Val Pro Val Asn Asp Ser Phe Cys Glu
    210                    215                    220
Lys Ile Leu Pro Trp Leu Asp Lys Ser Val Asp Phe Ile Glu Lys Ala
225                    230                    235                    240
Lys Ala Ser Asn Gly Cys Val Leu Val His Cys Leu Ala Gly Ile Ser
                245                    250                    255
Arg Ser Ala Thr Ile Ala Ile Ala Tyr Ile Met Lys Arg Met Asp Met
            260                    265                    270
Ser Leu Asp Glu Ala Tyr Arg Phe Val Lys Glu Lys Arg Pro Thr Ile
    275                    280                    285
Ser Pro Asn Phe Asn Phe Leu Gly Gln Leu Leu Asp Tyr Glu Lys Lys
    290                    295                    300
Ile Lys Asn Gln Thr Gly Ala Ser Gly Pro Lys Ser Lys Leu Lys Leu
305                    310                    315                    320
Leu His Leu Glu Lys Pro Asn Glu Pro Val Pro Ala Val Ser Glu Gly
                325                    330                    335
Gly Gln Lys Ser Glu Thr Pro Leu Ser Pro Pro Cys Ala Asp Ser Ala
            340                    345                    350
Thr Ser Glu Ala Ala Gly Gln Arg Pro Val His Pro Ala Ser Val Pro
            355                    360                    365
Ser Val Pro Ser Val Gln Pro Ser Leu Leu Glu Asp Ser Pro Leu Val
    370                    375                    380
Gln Ala Leu Ser Gly Leu His Leu Ser Ala Asp Arg Leu Glu Asp Ser
385                    390                    395                    400
Asn Lys Leu Lys Arg Ser Phe Ser Leu Asp Ile Lys Ser Val Ser Tyr
                405                    410                    415
Ser Ala Ser Met Ala Ala Ser Leu His Gly Phe Ser Ser Ser Glu Asp
            420                    425                    430
Ala Leu Glu Tyr Tyr Lys Pro Ser Thr Thr Leu Asp Gly Thr Asn Lys
            435                    440                    445
Leu Cys Gln Phe Ser Pro Val Gln Glu Leu Cys Gly Ala Asp Ser Arg
    450                    455                    460
Asn Gln Ser Xaa Xaa Gly Gly Ser Gln Pro Ser Pro Arg Ser Cys Arg
465                    470                    475                    480
Pro Pro Gly Leu Gln Thr Ala Arg Ala Ser Asp Cys Ile Arg Ser Glu
                485                    490                    495
Pro Ala Ala Val Ala Pro Pro Arg Gly Pro Phe Tyr Leu His Cys Ile
            500                    505                    510
Glu Val Gly Ala Trp Arg Thr Ile Thr Thr Pro Ala Ser Phe Ser Ala
            515                    520                    525
Phe Pro Pro Pro Ala Ala Pro His Glu Val Cys Trp Pro Gly Pro Xaa
    530                    535                    540
Gly Leu Ala Pro Asp Ile Leu Ala Pro Gln Thr Ser Thr Pro Ser Leu
545                    550                    555                    560
Thr Ser Ser Trp Tyr Phe Ala Thr Glu Ser Ser His Phe Tyr Ser Ala
                565                    570                    575
Ser Ala Ile Tyr Gly Gly Ser Ala Ser Tyr Ser Ala Tyr Ser Cys Ser
            580                    585                    590
Gln Leu Pro Thr Cys Gly Asp Gln Val Tyr Ser Val Arg Arg Arg Gln
    595                    600                    605
Lys Pro Ser Asp Arg Ala Asp Ser Arg Arg Ser Trp His Glu Glu Ser
    610                    615                    620
Pro Phe Glu Lys Gln Phe Lys Arg Arg Ser Cys Gln Met Glu Phe Gly
625                    630                    635                    640
Glu Ser Ile Met Ser Glu Asn Arg Ser Arg Glu Glu Leu Gly Lys Val
                645                    650                    655
Gly Ser Gln Ser Ser Phe Ser Gly Ser Met Glu Ile Ile Glu Val Ser
            660                    665                    670        672
```

```
<210> 1260
<211> 260
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1260
Ala Ser Ser Ser Lys Arg Val Ser Arg Gln Lys Met Leu Gln Leu Trp
1               5                  10                  15
Lys Leu Val Leu Leu Cys Gly Val Leu Thr Gly Thr Ser Glu Ser Leu
            20                  25                  30
Leu Asp Asn Leu Gly Asn Asp Leu Ser Asn Val Val Asp Lys Leu Glu
        35                  40                  45
Pro Val Leu His Glu Gly Leu Glu Thr Val Asp Asn Thr Leu Lys Gly
    50                  55                  60
Ile Leu Glu Lys Leu Lys Val Asp Leu Gly Val Leu Gln Lys Ser Ser
65                  70                  75                  80
Ala Trp Gln Leu Ala Lys Gln Lys Ala Gln Glu Ala Glu Lys Leu Leu
                85                  90                  95
Asn Asn Val Ile Ser Lys Leu Leu Pro Thr Asn Thr Asp Ile Phe Gly
            100                 105                 110
Leu Lys Ile Ser Asn Ser Leu Ile Leu Asp Val Lys Ala Glu Pro Ile
        115                 120                 125
Asp Asp Gly Lys Gly Leu Asn Leu Ser Phe Pro Val Thr Ala Asn Val
    130                 135                 140
Thr Glu Ala Gly Pro Ile Ile Asp Gln Ile Ile Asn Leu Arg Ala Ser
145                 150                 155                 160
Leu Asp Leu Leu Thr Ala Val Thr Ile Glu Thr Asp Pro Gln Thr His
                165                 170                 175
His Pro Val Ala Gly Leu Gly Glu Cys Ala Arg Asp Pro Thr Ser Ile
                180                 185                 190
Ser Leu Cys Leu Leu Asp Lys His Ser Gln Ile Ile Asn Lys Phe Val
        195                 200                 205
Asn Ser Val Ile Asn Thr Leu Lys Ser Thr Val Ser Ser Leu Leu Gln
    210                 215                 220
Lys Glu Ile Cys Pro Leu Ile Arg Ile Phe Ile His Ser Leu Asp Val
225                 230                 235                 240
Asn Val Ile Gln Gln Val Val Asp Asn Pro Gln His Lys Thr Gln Leu
                245                 250                 255
Gln Thr Leu Ile
            260
```

```
<210> 1261
<211> 278
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1261
Cys Ser Leu Arg Arg Pro Arg Ser Ala Ala Glu Pro Asp Ala Asp His
1               5                  10                  15
Val Pro Leu Leu Gly Leu Leu Arg Leu Gln Leu Arg Ala Ala Arg Gln
            20                  25                  30
Pro Gly Ala Met Arg Pro Gln Gly Pro Ala Ala Ser Pro Gln Arg Leu
```

```
              35                         40                       45
Arg Gly Leu Leu Leu Leu Leu Leu Leu Gln Leu Pro Ala Pro Ser Ser
       50                       55                       60
Ala Ser Glu Ile Pro Lys Gly Lys Gln Lys Ala Gln Leu Arg Gln Arg
65                       70                       75                       80
Glu Val Val Asp Leu Tyr Asn Gly Met Cys Leu Gln Gly Pro Ala Gly
                   85                       90                       95
Val Pro Gly Arg Asp Gly Ser Pro Gly Ala Asn Gly Ile Pro Gly Thr
              100                      105                      110
Pro Gly Ile Pro Gly Arg Asp Gly Phe Lys Gly Glu Lys Gly Glu Cys
              115                      120                      125
Leu Arg Glu Ser Phe Glu Glu Ser Trp Thr Pro Asn Tyr Lys Gln Cys
       130                      135                      140
Ser Trp Ser Ser Leu Asn Tyr Gly Ile Asp Leu Gly Lys Ile Ala Glu
145                      150                      155                      160
Cys Thr Phe Thr Lys Met Arg Ser Asn Ser Ala Leu Arg Val Leu Phe
                   165                      170                      175
Ser Gly Ser Leu Arg Leu Lys Cys Arg Asn Ala Cys Cys Gln Arg Trp
              180                      185                      190
Tyr Phe Thr Phe Asn Gly Ala Glu Cys Ser Gly Pro Leu Pro Ile Glu
       195                      200                      205
Ala Ile Ile Tyr Leu Asp Gln Gly Ser Pro Glu Met Asn Ser Thr Ile
       210                      215                      220
Asn Ile His Arg Thr Ser Ser Val Glu Gly Leu Cys Glu Gly Ile Gly
225                      230                      235                      240
Ala Gly Leu Val Asp Val Ala Ile Trp Val Gly Thr Cys Ser Asp Tyr
                   245                      250                      255
Pro Lys Gly Asp Ala Ser Thr Gly Trp Asn Ser Val Ser Arg Ile Ile
              260                      265                      270
Ile Glu Glu Leu Pro Lys
       275                      278


         <210> 1262
         <211> 362
         <212>Amino acid
         <213> Homo sapiens



         <400> 1262
Met His Ser Ala Met Leu Gly Thr Arg Val Asn Leu Ser Val Ser Asp
1               5                       10                       15
Phe Trp Arg Val Met Met Arg Val Cys Trp Leu Val Arg Gln Asp Ser
              20                       25                       30
Arg His Gln Arg Ile Arg Leu Pro His Leu Glu Ala Val Val Ile Gly
       35                       40                       45
Arg Gly Pro Glu Thr Lys Ile Thr Asp Lys Lys Cys Ser Arg Gln Gln
       50                       55                       60
Val Gln Leu Lys Ala Glu Cys Asn Lys Gly Tyr Val Lys Val Lys Gln
65                       70                       75                       80
Val Gly Val Asn Pro Thr Ser Ile Asp Ser Val Val Ile Gly Lys Asp
                   85                       90                       95
Gln Glu Val Lys Leu Gln Pro Gly Gln Val Leu His Met Val Asn Glu
              100                      105                      110
Leu Tyr Pro Tyr Ile Val Glu Phe Glu Glu Glu Ala Lys Asn Pro Gly
       115                      120                      125
Leu Glu Thr His Arg Lys Arg Lys Arg Ser Gly Asn Ser Asp Ser Ile
       130                      135                      140
Glu Arg Asp Ala Ala Gln Glu Ala Glu Ala Gly Thr Gly Leu Glu Pro
145                      150                      155                      160
Gly Ser Asn Ser Gly Gln Cys Ser Val Pro Leu Lys Lys Gly Lys Asp
```

```
                       165                    170                    175
Ala Pro Ile Lys Lys Glu Ser Leu Gly His Trp Ser Gln Gly Leu Lys
                180                    185                    190
Ile Ser Met Gln Asp Pro Lys Met Gln Val Tyr Lys Asp Glu Gln Val
             195                    200                    205
Val Val Ile Lys Asp Lys Tyr Pro Lys Ala Arg Tyr His Trp Leu Val
210                    215                    220
Leu Pro Trp Thr Ser Ile Ser Ser Leu Lys Ala Val Ala Arg Glu His
225                    230                    235                    240
Leu Glu Leu Leu Lys His Met His Thr Val Gly Glu Lys Val Ile Val
                245                    250                    255
Asp Phe Ala Gly Ser Ser Lys Leu Arg Phe Arg Leu Gly Tyr His Ala
                260                    265                    270
Ile Pro Ser Met Ser His Val His Leu His Val Ile Ser Gln Asp Phe
                275                    280                    285
Asp Ser Pro Cys Leu Lys Asn Lys Lys His Trp Asn Ser Phe Asn Thr
             290                    295                    300
Glu Tyr Phe Leu Glu Ser Gln Ala Val Ile Glu Met Val Gln Glu Ala
305                    310                    315                    320
Gly Arg Val Thr Val Arg Asp Gly Met Pro Glu Leu Leu Lys Leu Pro
                325                    330                    335
Leu Arg Cys His Glu Cys Gln Gln Leu Leu Pro Ser Ile Pro Gln Leu
                340                    345                    350
Lys Glu His Leu Arg Lys His Trp Thr Gln
                355                    360    362
```

```
     <210> 1263
     <211> 618
     <212>Amino acid
     <213> Homo sapiens

     <220>
     <221> misc_feature
     <222> (1)...(618)
     <223> X = any amino acid or stop code
```

```
     <400> 1263
Asp Met Ser Asp Thr Ser Glu Ser Gly Ala Gly Leu Thr Arg Phe Gln
  1               5                    10                    15
Ala Glu Ala Ser Glu Lys Asp Ser Ser Ser Met Met Gln Thr Leu Leu
                20                    25                    30
Thr Val Thr Gln Asn Val Glu Val Pro Glu Thr Pro Lys Ala Ser Lys
             35                    40                    45
Ala Leu Glu Val Ser Glu Asp Val Lys Val Ser Lys Ala Ser Gly Val
       50                    55                    60
Ser Lys Ala Thr Glu Val Ser Lys Thr Pro Glu Ala Arg Glu Ala Pro
65                    70                    75                    80
Ala Thr Gln Ala Ser Ser Thr Thr Gln Leu Thr Asp Thr Gln Val Leu
                85                    90                    95
Ala Ala Glu Asn Lys Ser Leu Ala Ala Asp Thr Lys Lys Gln Asn Ala
             100                    105                    110
Asp Pro Gln Ala Val Thr Met Pro Ala Thr Glu Thr Lys Lys Val Ser
       115                    120                    125
His Val Ala Asp Thr Lys Val Asn Thr Lys Ala Gln Glu Thr Glu Ala
130                    135                    140
Ala Pro Ser Gln Ala Pro Ala Asp Glu Pro Glu Pro Glu Ser Ala Ala
145                    150                    155                    160
Ala Gln Ser Gln Glu Asn Gln Asp Thr Arg Pro Lys Val Lys Ala Lys
                165                    170                    175
```

```
Lys Ala Arg Lys Val Lys His Leu Asp Gly Glu Glu Asp Gly Ser Ser
        180              185              190
Asp Gln Ser'Gln Ala Ser Gly Thr Thr Gly Gly Arg Arg Val Ser Lys
        195              200              205
Ala Leu Met Ala Ser Met Ala Arg Arg Ala Ser Arg Gly Pro Ile Ala
        210              215              220
Phe Trp Ala Arg Arg Ala Ser Arg Thr Arg Leu Ala Cys Phe Gly Pro
225              230              235              240
Gly Glu Pro Leu Leu Ser Pro Trp Arg Ser Pro Lys Ala Arg Arg Gln
        245              250              255
Arg Gly Phe Ala Val Arg Val Ala Lys Phe Gln Ser Ser Gln Glu Pro
        260              265              270
Glu Ala Pro Pro Pro Trp Asp Val Ala Leu Leu Gln Gly Arg Ala Asn
        275              280              285
Asp Leu Val Lys Tyr Leu Leu Ala Lys Asp Gln Thr Lys Ile Pro Ile
        290              295              300
Lys Arg Ser Asp Met Leu Lys Asp Ile Ile Lys Glu Tyr Thr Asp Val
305              310              315              320
Tyr Pro Glu Ile Ile Glu Arg Ala Gly Tyr Ser Leu Glu Lys Val Phe
        325              330              335
Gly Ile Gln Leu Lys Glu Ile Asp Lys Asn Asp His Leu Tyr Ile Leu
        340              345              350
Leu Ser Thr Leu Glu Pro Thr Asp Ala Gly Ile Leu Gly Thr Thr Lys
        355              360              365
Asp Ser Pro Lys Leu Gly Leu Leu Met Val Leu Leu Ser Ile Ile Phe
370              375              380
Met Asn Gly Asn Arg Ser Ser Glu Ala Val Ile Trp Glu Val Leu Arg
385              390              395              400
Arg Ser Leu Gly Leu Arg Leu Gly Ile His His Ser Leu Leu Gly Asp
        405              410              415
Val Lys Lys Leu Ile Thr Asp Glu Val Val Lys Gln Lys Tyr Leu Asp
        420              425              430
Tyr Ala Arg Val Pro His Ser Asn Ser Pro Glu Tyr Glu Phe Phe Trp
        435              440              445
Gly Leu Arg Ser Tyr Tyr Glu Asp Gln Gln Arg Xaa Lys Ser Phe Lys
        450              455              460
Phe Ala Cys Lys Val Gln Lys Lys Asp Pro Lys Glu Trp Ala Ala Gln
465              470              475              480
Ser Pro Pro Gly Lys Ala Arg Glu Arg Met Glu Ala Asp Leu Lys Ala
        485              490              495
Ala Ser Xaa Gly Ser Pro Trp Lys Pro Arg Leu Arg Ala Glu Ile Lys
        500              505              510
Ala Arg Met Gly Ile Gly Leu Gly Ser Glu Asn Ala Ala Gly Pro Cys
        515              520              525
Asn Trp Asp Glu Ala Asp Ile Gly Pro Trp Ala Lys Ala Arg Ile Gln
        530              535              540
Ala Gly Ala Glu Ala Lys Ala Lys Ala Gln Glu Ser Gly Ser Ala Ser
545              550              555              560
Thr Gly Ala Ser Thr Ser Thr Asn Asn Ser Ala Ser Ala Ser Ala Ser
        565              570              575
Thr Ser Gly Gly Phe Ser Ala Gly Ala Ser Leu Thr Ala Thr Leu Thr
        580              585              590
Phe Gly Leu Phe Ala Gly Leu Gly Gly Ala Gly Ala Ser Thr Ser Gly
        595              600              605
Ser Ser Gly Ala Cys Gly Phe Ser Tyr Lys
610              615              618
```

```
<210> 1264
<211> 464
<212>Amino acid
<213> Homo sapiens

<220>
```

```
<221> misc_feature
<222> (1)...(464)
<223> X = any amino acid or stop code
```

```
<400> 1264
Ala Arg Pro Pro Val Cys Thr Gly Ser Thr Met Ser Leu Thr Val Val
1               5                   10                  15
Ser Met Ala Cys Val Gly Phe Phe Leu Leu Gln Gly Ala Trp Pro Leu
            20                  25                  30
Met Gly Gly Gln Asp Lys Pro Phe Leu Ser Ala Arg Pro Ser Thr Val
        35                  40                  45
Val Pro Arg Gly Gly His Val Ala Leu Gln Cys His Tyr Arg Arg Gly
    50                  55                  60
Phe Asn Asn Phe Met Leu Tyr Lys Glu Asp Arg Ser His Val Pro Ile
65                  70                  75                  80
Phe His Gly Arg Ile Phe Gln Glu Ser Phe Ile Met Gly Pro Val Thr
                85                  90                  95
Pro Ala His Ala Gly Thr Tyr Arg Cys Arg Gly Ser Arg Pro His Ser
            100                 105                 110
Leu Thr Gly Trp Ser Ala Pro Ser Asn Pro Leu Val Ile Met Val Thr
        115                 120                 125
Gly Asn His Arg Lys Pro Ser Leu Leu Ala His Pro Gly Pro Leu Leu
    130                 135                 140
Lys Ser Gly Glu Thr Val Ile Leu Gln Cys Trp Ser Asp Ile Met Phe
145                 150                 155                 160
Glu His Phe Phe Leu His Lys Glu Gly Ile Ser Lys Asp Pro Ser Arg
                165                 170                 175
Leu Val Gly Gln Ile His Asp Gly Val Ser Lys Ala Asn Phe Ser Ile
            180                 185                 190
Gly Pro Met Met Leu Ala Leu Ala Gly Thr Tyr Arg Cys Tyr Gly Ser
        195                 200                 205
Val Thr His Thr Pro Tyr Gln Leu Ser Ala Pro Ser Asp Pro Leu Asp
    210                 215                 220
Ile Val Val Thr Gly Pro Tyr Glu Lys Pro Ser Leu Ser Ala Gln Pro
225                 230                 235                 240
Gly Pro Lys Val Gln Ala Gly Glu Ser Val Thr Leu Ser Cys Ser Ser
            245                 250                 255
Arg Ser Ser Tyr Asp Met Tyr His Leu Ser Arg Glu Gly Gly Ala His
        260                 265                 270
Glu Arg Arg Leu Pro Ala Val Arg Lys Val Asn Arg Thr Phe Gln Ala
    275                 280                 285
Asp Phe Pro Leu Gly Pro Ala Thr His Gly Gly Thr Tyr Arg Cys Phe
    290                 295                 300
Gly Ser Phe Arg His Ser Pro Tyr Glu Trp Ser Asp Pro Ser Asp Pro
305                 310                 315                 320
Leu Leu Val Ser Val Thr Gly Asn Pro Ser Ser Ser Trp Pro Ser Pro
            325                 330                 335
Thr Glu Pro Ser Ser Lys Ser Gly Asn Leu Arg His Leu His Ile Leu
        340                 345                 350
Ile Gly Thr Ser Val Val Lys Ile Pro Phe Thr Ile Leu Leu Phe Phe
    355                 360                 365
Leu Leu His Arg Trp Cys Ser Asn Lys Lys Asn Ala Ala Val Met Asp
    370                 375                 380
Gln Glu Pro Ala Gly Asn Arg Val Asn Ser Glu Asp Ser Asp Glu Gln
385                 390                 395                 400
Asp His Gln Glu Val Ser Tyr Pro Xaa Leu Glu His Cys Val Phe Thr
                405                 410                 415
Gln Arg Lys Ile Thr Arg Pro Ser Gln Arg Pro Lys Thr Pro Pro Thr
            420                 425                 430
Asp Thr Ser Met Tyr Ile Glu Leu Pro Asn Ala Glu Pro Arg Ser Lys
```

```
              435                440                445
Val Val Phe Cys Pro Arg Ala Pro Gln Ser Gly Leu Glu Gly Ile Phe
    450                455                460            464
```

```
        <210> 1265
        <211> 1879
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(1879)
        <223> X = any amino acid or stop code
```

```
        <400> 1265
Leu His Asn Leu Arg Glu Arg Tyr Phe Ser Gly Leu Ile Tyr Thr Tyr
  1               5                10               15
Ser Gly Leu Phe Cys Val Val Val Asn Pro Tyr Lys His Leu Pro Ile
            20               25               30
Tyr Ser Glu Lys Ile Val Asp Met Tyr Lys Gly Lys Lys Arg His Glu
        35               40               45
Met Pro Pro His Ile Tyr Ala Ile Ala Asp Thr Ala Tyr Arg Ser Met
    50               55               60
Leu Gln Asp Arg Glu Asp Gln Ser Ile Leu Cys Thr Gly Glu Ser Gly
 65               70               75               80
Ala Gly Lys Thr Glu Asn Thr Lys Lys Val Ile Gln Tyr Leu Ala Val
            85               90               95
Val Ala Ser Ser His Lys Gly Lys Lys Asp Thr Ser Ile Thr Gly Glu
            100              105              110
Leu Glu Lys Gln Leu Leu Gln Ala Asn Pro Ile Leu Glu Ala Phe Gly
        115              120              125
Asn Ala Lys Thr Val Lys Asn Asp Asn Ser Ser Arg Phe Gly Lys Phe
    130              135              140
Ile Arg Ile Asn Phe Asp Val Thr Gly Tyr Ile Val Gly Ala Asn Ile
145              150              155              160
Glu Thr Tyr Leu Leu Glu Lys Ser Arg Ala Ile Arg Gln Ala Arg Asp
            165              170              175
Glu Arg Thr Phe His Ile Phe Tyr Tyr Met Ile Ala Gly Ala Lys Glu
        180              185              190
Lys Met Arg Ser Asp Leu Leu Leu Glu Gly Phe Asn Asn Tyr Thr Phe
        195              200              205
Leu Ser Asn Gly Phe Val Pro Ile Pro Ala Ala Gln Asp Asp Glu Met
210              215              220
Phe Gln Glu Thr Val Glu Ala Met Ala Ile Met Gly Phe Ser Glu Glu
225              230              235              240
Glu Gln Leu Ser Ile Leu Lys Val Val Ser Ser Val Leu Gln Leu Gly
            245              250              255
Asn Ile Val Phe Lys Lys Glu Arg Asn Thr Asp Gln Ala Ser Met Pro
            260              265              270
Asp Asn Thr Ala Ala Gln Lys Val Cys His Leu Met Gly Ile Asn Val
    275              280              285
Thr Asp Phe Thr Arg Ser Ile Leu Thr Pro Arg Ile Lys Val Gly Arg
290              295              300
Asp Val Val Gln Lys Ala Gln Thr Lys Glu Gln Ala Asp Phe Ala Val
305              310              315              320
Glu Ala Leu Ala Lys Ala Thr Tyr Glu Arg Leu Phe Arg Trp Ile Leu
            325              330              335
```

```
Thr Arg Val Asn Lys Ala Leu Asp Lys Thr His Arg Gln Gly Ala Ser
            340                 345                 350
Phe Leu Gly Ile Leu Asp Ile Ala Gly Phe Glu Ile Phe Glu Val Asn
            355                 360                 365
Ser Phe Glu Gln Leu Cys Ile Asn Tyr Thr Asn Glu Lys Leu Gln Gln
            370                 375             380
Leu Phe Asn His Thr Met Phe Ile Leu Glu Gln Glu Glu Tyr Gln Arg
385                 390                 395                 400
Glu Gly Ile Glu Trp Asn Phe Ile Asp Phe Gly Leu Asp Leu Gln Pro
                    405                 410                 415
Cys Ile Glu Leu Ile Glu Arg Pro Asn Asn Pro Pro Gly Val Leu Ala
            420                 425                 430
Leu Leu Asp Glu Glu Cys Trp Phe Pro Lys Ala Thr Asp Lys Ser Phe
            435                 440                 445
Val Glu Lys Leu Cys Thr Glu Gln Gly Ser His Pro Lys Phe Gln Lys
450                 455                 460
Pro Lys Gln Leu Lys Asp Lys Thr Glu Phe Ser Ile Ile His Tyr Ala
465                 470                 475                 480
Gly Lys Val Asp Tyr Asn Ala Ser Ala Trp Leu Thr Lys Asn Met Asp
                485                 490                 495
Pro Leu Asn Asp Asn Val Thr Ser Leu Leu Asn Ala Ser Ser Asp Lys
            500                 505                 510
Phe Val Ala Asp Leu Trp Lys Asp Val Asp Arg Ile Val Gly Leu Asp
            515                 520                 525
Gln Met Ala Lys Met Thr Glu Ser Ser Leu Pro Ser Ala Ser Lys Thr
            530                 535                 540
Lys Lys Gly Met Phe Arg Thr Val Gly Gln Leu Tyr Lys Glu Gln Leu
545                 550                 555                 560
Gly Lys Leu Met Thr Thr Leu Arg Asn Thr Thr Pro Asn Phe Val Arg
                565                 570                 575
Cys Ile Ile Pro Asn His Glu Lys Arg Ser Gly Lys Leu Asp Ala Phe
            580                 585                 590
Leu Val Leu Glu Gln Leu Arg Cys Asn Gly Val Leu Glu Gly Ile Arg
            595                 600                 605
Ile Cys Arg Gln Gly Phe Pro Asn Arg Ile Val Phe Gln Glu Phe Arg
            610                 615                 620
Gln Arg Tyr Glu Ile Leu Ala Ala Asn Ala Ile Pro Lys Gly Phe Met
625                 630                 635                 640
Asp Gly Lys Gln Ala Cys Ile Leu Met Ile Lys Ala Leu Glu Leu Asp
                645                 650                 655
Pro Asn Leu Tyr Arg Ile Gly Gln Ser Lys Ile Phe Phe Arg Thr Gly
                660                 665                 670
Val Leu Ala His Leu Glu Glu Glu Arg Asp Leu Lys Ile Thr Asp Val
            675                 680                 685
Ile Met Ala Phe Gln Ala Met Cys Arg Gly Tyr Leu Ala Arg Lys Ala
            690                 695                 700
Phe Ala Lys Arg Gln Gln Gln Leu Thr Ala Met Lys Val Ile Gln Arg
705                 710                 715                 720
Asn Cys Ala Ala Tyr Ile Lys Leu Arg Asn Trp Gln Trp Cys Arg Leu
                725                 730                 735
Phe Thr Lys Val Xaa Pro Leu Leu Gln Val Thr Arg Gln Glu Xaa Glu
                740                 745                 750
Met Gln Ala Lys Glu Asp Glu Leu Gln Lys Thr Lys Glu Arg Gln Gln
            755                 760                 765
Lys Ala Glu Asn Glu Leu Lys Glu Leu Glu Gln Lys His Ser Gln Leu
770                 775                 780
Thr Glu Glu Lys Asn Leu Leu Gln Glu Gln Leu Gln Ala Glu Thr Glu
785                 790                 795                 800
Leu Tyr Ala Glu Ala Glu Glu Met Arg Val Arg Leu Ala Ala Lys Lys
                805                 810                 815
Gln Glu Leu Glu Glu Ile Leu His Glu Met Glu Ala Arg Leu Glu Glu
            820                 825                 830
Glu Glu Asp Arg Gly Gln Gln Leu Gln Ala Glu Arg Lys Lys Met Ala
            835                 840             845
```

Gln Gln Met Leu Asp Leu Glu Glu Gln Leu Glu Glu Glu Glu Ala Ala
   850   855   860

Arg Gln Lys Leu Gln Leu Glu Lys Val Thr Ala Glu Ala Lys Ile Lys
865   870   875   880

Lys Leu Glu Asp Glu Ile Leu Val Met Asp Asp Gln Asn Asn Lys Leu
            885   890   895

Ser Lys Glu Arg Lys Leu Leu Glu Glu Arg Ile Ser Asp Leu Thr Thr
        900   905   910

Asn Leu Ala Glu Glu Glu Lys Ala Lys Asn Leu Thr Lys Leu Lys
       915   920   925

Asn Lys His Glu Ser Met Ile Ser Glu Leu Glu Val Arg Leu Lys Lys
   930   935   940

Glu Glu Lys Ser Arg Gln Glu Leu Glu Lys Leu Lys Arg Lys Leu Glu
945   950   955   960

Gly Asp Ala Ser Asp Phe His Glu Gln Ile Ala Asp Leu Gln Ala Gln
        965   970   975

Ile Ala Glu Leu Lys Met Gln Leu Ala Lys Lys Glu Glu Glu Leu Gln
        980   985   990

Ala Ala Leu Ala Arg Leu Asp Asp Glu Ile Ala Gln Lys Asn Asn Ala
       995   1000   1005

Leu Lys Lys Ile Arg Glu Leu Glu Gly His Ile Ser Asp Leu Gln Glu
   1010   1015   1020

Asp Leu Asp Ser Glu Arg Ala Ala Arg Asn Lys Ala Glu Lys Gln Lys
1025   1030   1035   1040

Arg Asp Leu Gly Glu Glu Leu Glu Ala Leu Lys Thr Glu Leu Glu Asp
        1045   1050   1055

Thr Leu Asp Ser Thr Ala Thr Gln Gln Glu Leu Arg Ala Lys Arg Glu
        1060   1065   1070

Gln Glu Val Thr Val Leu Lys Arg Ala Leu Asn Glu Glu Thr Arg Ser
     1075   1080   1085

His Glu Ala Gln Val Gln Glu Met Arg Gln Lys His Ala Gln Ala Val
   1090   1095   1100

Gln Ser Leu Thr Glu Gln Leu Glu Gln Xaa Lys Arg Ala Lys Ala Asn
1105   1110   1115   1120

Leu Asp Lys Asn Lys Gln Thr Leu Glu Lys Glu Asn Thr Asp Leu Ala
        1125   1130   1135

Gly Glu Leu Arg Val Leu Gly Gln Ala Lys Gln Glu Val Glu His Arg
        1140   1145   1150

Met Lys Lys Leu Gln Ala Gln Val Gln Glu Leu Gln Ser Lys Cys Ser
     1155   1160   1165

Asp Gly Glu Arg Ala Arg Ala Glu Leu Asn Asp Lys Val His Lys Leu
   1170   1175   1180

Gln Asn Glu Val Glu Ser Val Thr Gly Met Leu Asn Glu Ala Glu Gly
1185   1190   1195   1200

Lys Ala Ile Lys Leu Ala Lys Asp Val Ala Ser Leu Ser Ser Gln Leu
        1205   1210   1215

Gln Asp Thr Gln Glu Leu Leu Gln Glu Glu Ser Arg Gln Lys Leu Asn
        1220   1225   1230

Val Ser Thr Ser Leu Arg Gln Leu Glu Glu Glu Arg Asn Ser Leu Gln
   1235   1240   1245

Asp Gln Leu Asp Glu Glu Met Glu Ala Lys Gln Asn Leu Glu Arg His
   1250   1255   1260

Ile Ser Thr Leu Asn Ile Gln Leu Ser Asp Ser Lys Lys Lys Leu Gln
1265   1270   1275   1280

Asp Phe Ala Ser Thr Val Glu Ala Leu Glu Glu Gly Lys Lys Arg Phe
        1285   1290   1295

Gln Lys Glu Ile Glu Asn Leu Thr Gln Gln Tyr Glu Glu Lys Ala Ala
        1300   1305   1310

Ala Tyr Asp Lys Leu Glu Lys Thr Lys Asn Arg Leu Gln Gln Glu Leu
   1315   1320   1325

Asp Asp Leu Val Val Asp Leu Asp Asn Gln Arg Gln Leu Val Ser Asn
   1330   1335   1340

Leu Glu Lys Lys Gln Arg Lys Phe Asp Gln Leu Leu Ala Glu Glu Lys
1345   1350   1355   1360

```
Asn Ile Ser Ser Lys Tyr Ala Asp Glu Arg Asp Arg Val Glu Ala Glu
         1365                1370                1375
Ala Arg Glu Lys Glu Thr Lys Ala Leu Ser Leu Ala Arg Ala Leu Glu
         1380                1385                1390
Glu Ala Leu Glu Ala Lys Glu Glu Leu Glu Arg Thr Asn Lys Met Leu
         1395                1400                1405
Lys Ala Glu Met Gly Arg Pro Gly Ser Ala Ser Lys Asp Asp Val Gly
         1410                1415                1420
Gln Glu Leu Ser His Asp Leu Glu Lys Ser Lys Arg Ala Leu Gly Asp
1425                1430                1435                1440
Pro Arg Leu Glu Glu Met Lys Thr Gln Leu Glu Glu Leu Gly Arg Thr
              1445                1450                1455
Glu Leu Ala Ser Pro Arg Arg Asp Ala Lys Leu Arg Leu Glu Val Asn
         1460                1465                1470
Met Gln Ala Pro Ser Arg Ala Ser Phe Glu Arg Asp Leu Gln Ala Arg
         1475                1480                1485
Thr Glu Gln Asn Glu Glu Ser Arg Arg His Leu Gln Arg Gln Leu His
         1490                1495                1500
Glu Tyr Glu Thr Glu Leu Glu Asp Glu Arg Lys Gln Arg Ala Leu Ala
1505                1510                1515                1520
Ala Ala Ala Lys Ile Lys Leu Gly Trp Asp Pro Val Arg Thr Leu Asp
              1525                1530                1535
Leu Xaa Ala Asp Ser Ala Ile Lys Gly Arg Gly Gly Lys Ala Ile Lys
         1540                1545                1550
Gln Leu Arg Lys Leu Gln Ala Gln Met Lys Asp Phe Gln Arg Glu Leu
         1555                1560                1565
Glu Asp Ala Arg Ala Ser Arg Asp Glu Ile Phe Ala Thr Ala Lys Glu
         1570                1575                1580
Asn Glu Lys Lys Ala Lys Ser Leu Glu Ala Asp Leu Met Gln Leu Gln
1585                1590                1595                1600
Glu Asp Leu Ala Ala Ala Glu Glu Gly Arg Lys Gln Ala Asp Leu Glu
              1605                1610                1615
Lys Glu Glu Leu Ala Glu Glu Leu Ala Ser Ser Leu Ser Gly Arg Asn
         1620                1625                1630
Ala Leu Gln Asp Glu Lys Arg Arg Leu Glu Ala Arg Ile Ala Gln Leu
         1635                1640                1645
Glu Glu Glu Leu Glu Glu Glu Gln Gly Asn Met Glu Ala Met Ser Asp
    1650                1655                1660
Arg Val Arg Lys Ala Thr Gln Gln Ala Glu Gln Leu Ser Asn Glu Leu
1665                1670                1675                1680
Ala Thr Glu Arg Ser Thr Ala Gln Lys Asn Glu Ser Ala Arg Gln Gln
         1685                1690                1695
Leu Glu Arg Gln Asn Lys Glu Leu Arg Ser Lys Leu His Glu Met Glu
    1700                1705                1710
Gly Ala Val Lys Ser Lys Phe Lys Ser Thr Ile Ala Ala Leu Glu Ala
    1715                1720                1725
Lys Ile Ala Gln Leu Glu Glu Gln Val Glu Gln Glu Ala Arg Glu Lys
    1730           1735                1740
Gln Ala Ala Thr Lys Ser Leu Lys Gln Lys Asp Lys Lys Leu Lys Glu
1745           1750                1755                1760
Ile Leu Leu Gln Val Glu Asp Glu Arg Lys Met Ala Glu Gln Tyr Lys
         1765                1770                1775
Glu Gln Ala Glu Lys Gly Asn Ala Arg Val Lys Gln Leu Lys Arg Gln
    1780                1785                1790
Leu Glu Glu Ala Glu Glu Glu Ser Gln Arg Ile Asn Ala Asn Arg Arg
    1795                1800                1805
Lys Leu Gln Arg Glu Leu Asp Glu Ala Thr Glu Ser Asn Glu Ala Met
1810                1815                1820
Gly Arg Glu Val Asn Ala Leu Lys Ser Lys Leu Arg Arg Gly Asn Glu
1825                1830                1835                1840
Thr Ser Phe Val Pro Ser Arg Arg Ser Gly Gly Arg Arg Val Ile Glu
         1845                1850                1855
Asn Ala Asp Gly Ser Glu Glu Glu Thr Asp Thr Arg Asp Ala Asp Phe
    1860                1865                1870
```

774

Asn Gly Thr Lys Ala Ser Glu
   1875   1879

      <210> 1266
      <211> 257
      <212>Amino acid
      <213> Homo sapiens

      <400> 1266
Lys Leu His Phe Ala Lys Ser Leu Asn Ser Glu Leu Ser Cys Ser Thr
 1   5   10   15
Arg Glu Ala Met Gln Asp Glu Asp Gly Tyr Ile Thr Leu Asn Ile Lys
         20   25   30
Thr Arg Lys Pro Ala Leu Val Ser Val Gly Pro Ala Ser Ser Ser Trp
       35   40   45
Trp Arg Val Met Ala Leu Ile Leu Leu Ile Leu Cys Val Gly Met Val
   50   55   60
Val Gly Leu Val Ala Leu Gly Ile Trp Ser Val Met Gln Arg Asn Tyr
65   70   75   80
Leu Gln Asp Glu Asn Glu Asn Arg Thr Gly Thr Leu Gln Gln Leu Ala
         85   90   95
Lys Arg Phe Cys Gln Tyr Val Val Lys Gln Ser Glu Leu Lys Gly Thr
       100   105   110
Phe Lys Gly His Lys Cys Ser Pro Cys Asp Thr Asn Trp Arg Tyr Tyr
       115   120   125
Gly Asp Ser Cys Tyr Gly Phe Phe Arg His Asn Leu Thr Trp Glu Glu
   130   135   140
Ser Lys Gln Tyr Cys Thr Asp Met Asn Ala Thr Leu Leu Lys Ile Asp
145   150   155   160
Asn Arg Asn Ile Val Glu Tyr Ile Lys Ala Arg Thr His Leu Ile Arg
         165   170   175
Trp Val Gly Leu Ser Arg Gln Lys Ser Asn Glu Val Trp Lys Trp Glu
       180   185   190
Asp Gly Ser Val Ile Ser Glu Asn Met Phe Glu Phe Leu Glu Asp Gly
       195   200   205
Lys Gly Asn Met Asn Cys Ala Tyr Phe His Asn Gly Lys Met His Pro
   210   215   220
Thr Phe Cys Glu Asn Lys His Tyr Leu Met Cys Glu Arg Lys Ala Gly
225   230   235   240
His Asp Pro Arg Trp Thr Gln Leu Pro Leu Met Pro Lys Arg Trp Thr
       245   250   255
Gly
257

      <210> 1267
      <211> 208
      <212>Amino acid
      <213> Homo sapiens

      <400> 1267
Asn Gln Gly Leu Arg Asp Val Gly Leu Cys Arg Thr Cys Leu Val Asn
 1   5   10   15
Lys Ile Phe Ala Ser Ser Ile Leu Gly Lys Ser His His His Ser Leu
         20   25   30

```
Val Ser Ile Asn Gln Gly His Asn Ala Pro Trp Lys Ala Ala Gly Ser
        35                  40                  45
Leu Pro Leu Lys Ala Ala Tyr Cys Gln Gly Phe Ser Pro Cys Asp Cys
    50                  55                  60
Leu Lys Tyr Gly Ser Trp Asp Glu Lys Asp Leu Met Val Pro Gln Pro
65                  70                  75                  80
Asp Thr His Lys Gly Ser Val Leu Arg Trp Ile Ser Lys Arg Gly Lys
                85                  90                  95
Pro Leu Ala Val Glu Met Glu Glu Gly His Cys Leu Cys Leu Pro Leu
            100             . 105             110
Gly Thr Glu Cys Leu Gly Val Lys Pro Ile Val His Leu Phe Asn Ser
        115                 120                 125
Glu Met Gly Glu Lys Arg Pro Val Ala Gly Ala Arg His Val Gly Ser
    130                 135                 140
Ser Ala Ala Leu Leu Phe Phe Thr Pro Leu Arg Cys Leu Gly Gly Glu
145                 150                 155                 160
Lys His Lys Ser Gly Leu Arg Ala Arg Pro Gly Ile Val Pro Ser Leu
                165                 170                 175
Glu Leu Asn Tyr Asp Ile Asp Ser Phe Ala His Met Phe Phe Ser Val
                180                 185                 190
Asp Leu Leu Leu Ile Ile Thr Leu Leu Ser Tyr Tyr Ile Pro Phe Cys
        195                 200                 205             208
```

```
<210> 1268
<211> 158
<212>Amino acid
<213> Homo sapiens
```

```
    <400> 1268
Met Trp Trp Arg Leu Ala Pro Thr Gln Ala Ile Trp Arg Ala Ala Gly
  1             5                   10                  15
Cys Cys Met Arg Phe Ser Arg Arg Arg Ser Thr Cys Cys Cys Leu Ala
            20                  25                  30
Ser Cys Ile Phe Leu Leu Tyr Lys Ile Val Arg Gly Asp Gln Pro Ala
        35                  40                  45
Ala Lys Arg Arg Gln Arg Arg Arg Ala Ala Pro Ser Ala Pro Pro
    50                  55                  60
Gln Ala Ala Arg Leu His Pro Pro Lys Leu Arg Arg Phe Asp Gly
65                  70                  75                  80
Val Gln Asp Pro Ala Pro Tyr Ser Trp Ala Ile Asn Gly Lys Val Phe
                85                  90                  95
Asp Val Thr Gln Arg Pro Ala Asn Phe Leu Arg Gly Pro Arg Gly Pro
            100                 105                 110
Glu Thr Leu Ser Asp Trp Glu Ser Gln Phe Thr Phe Lys Tyr His His
        115                 120                 125
Val Gly Lys Leu Leu Lys Glu Gly Glu Glu Pro Thr Val Tyr Ser Asp
    130                 135                 140
Glu Glu Glu Pro Lys Asp Glu Ser Ala Arg Lys Asn Asp     *
145                 150                 155     157
```

```
·<210> 1269
<211> 178
<212>Amino acid
<213> Homo sapiens
```

<400> 1269

```
Gly Pro Arg Met Ala Lys Phe Leu Ser Gln Asp Gln Ile Asn Glu Tyr
 1               5                  10                  15
Lys Glu Cys Phe Ser Leu Tyr Asp Lys Gln Gln Arg Gly Lys Ile Lys
            20                  25                  30
Ala Thr Asp Leu Met Val Ala Met Arg Cys Leu Gly Ala Ser Pro Thr
            35                  40                  45
Pro Gly Glu Val Gln Arg His Leu Gln Thr His Gly Ile Asp Gly Asn
     50                  55                  60
Gly Glu Leu Asp Phe Ser Thr Phe Leu Thr Ile Met His Met Gln Ile
 65                  70                  75                  80
Lys Gln Glu Asp Pro Lys Lys Glu Ile Leu Leu Ala Met Leu Met Val
                85                  90                  95
Asp Lys Glu Lys Lys Gly Tyr Val Met Ala Ser Asp Leu Arg Ser Lys
           100                 105                 110
Leu Thr Ser Leu Gly Glu Lys Leu Thr His Lys Glu Val Asp Asp Leu
           115                 120                 125
Phe Arg Glu Ala Asp Ile Glu Pro Asn Gly Lys Val Lys Tyr Asp Glu
     130                 135                 140
Phe Ile His Lys Ile Thr Leu Leu Pro Gly Arg Asp Leu Leu Lys Glu
145                 150                 155                 160
Glu Asn Gly Arg Ala Ser Pro Gly Pro Glu Asn Leu Glu Gln Leu Ile
               165                 170                 175
Phe Leu
178
```

<210> 1270
<211> 457
<212> Amino acid
<213> Homo sapiens

<400> 1270

```
Ala Asp Pro His Thr Thr Val Ile Arg Phe Phe Pro Ala Ala Ser Ala
 1               5                  10                  15
Thr Lys Arg Val Leu Pro Pro Val Leu Arg Val Ser Ser Pro Arg Thr
            20                  25                  30
Trp Asn Pro Asn Val Pro Glu Ser Pro Arg Ile Pro Ala Pro Arg Leu
            35                  40                  45
Pro Lys Arg Met Ser Gly Ala Pro Thr Ala Gly Ala Ala Leu Met Leu
     50                  55                  60
Cys Ala Ala Thr Ala Val Leu Leu Ser Ala Gln Gly Gly Pro Val Gln
 65                  70                  75                  80
Ser Lys Ser Pro Arg Phe Ala Ser Trp Asp Glu Met Asn Val Leu Ala
                85                  90                  95
His Gly Leu Leu Gln Leu Gly Gln Gly Leu Arg Glu His Ala Glu Arg
           100                 105                 110
Thr Arg Ser Gln Leu Ser Ala Leu Glu Arg Arg Leu Ser Ala Cys Gly
           115                 120                 125
Ser Ala Cys Gln Gly Thr Glu Gly Ser Thr Asp Leu Pro Leu Ala Pro
     130                 135                 140
Glu Ser Arg Val Asp Pro Glu Val Leu His Ser Leu Gln Thr Gln Leu
145                 150                 155                 160
Lys Ala Gln Asn Ser Arg Ile Gln Gln Leu Phe His Lys Val Ala Gln
               165                 170                 175
Gln Gln Arg His Leu Glu Lys Gln His Leu Arg Ile Gln His Leu Gln
               180                 185                 190
```

```
Ser Gln Phe Gly Leu Leu Asp His Lys His Leu Asp His Glu Val Ala
        195                 200                 205
Lys Pro Ala Arg Arg Lys Arg Leu Pro Glu Met Ala Gln Pro Val Asp
    210                 215                 220
Pro Ala His Asn Val Ser Arg Leu His Arg Leu Pro Arg Asp Cys Gln
225                 230                 235                 240
Glu Leu Phe Gln Val Gly Glu Arg Gln Ser Gly Leu Phe Glu Ile Gln
            245                 250                 255
Pro Gln Gly Ser Pro Pro Phe Leu Val Asn Cys Lys Met Thr Ser Asp
        260                 265                 270
Gly Gly Trp Thr Val Ile Gln Arg Arg His Asp Gly Ser Val Asp Phe
        275                 280                 285
Asn Arg Pro Trp Glu Ala Tyr Lys Ala Gly Phe Gly Asp Pro His Gly
    290                 295                 300
Glu Phe Trp Leu Gly Leu Glu Lys Val His Ser Ile Thr Gly Asp Arg
305                 310                 315                 320
Asn Ser Arg Leu Ala Val Gln Leu Arg Asp Trp Asp Gly Asn Ala Glu
            325                 330                 335
Leu Leu Gln Phe Ser Val His Leu Gly Gly Glu Asp Thr Ala Tyr Ser
        340                 345                 350
Leu Gln Leu Thr Ala Pro Val Ala Gly Gln Leu Gly Ala Thr Thr Val
        355                 360                 365
Pro Pro Ser Gly Leu Ser Val Pro Phe Ser Thr Trp Asp Gln Asp His
    370                 375                 380
Asp Leu Arg Arg Asp Lys Asn Cys Ala Lys Ser Leu Ser Gly Gly Trp
385                 390                 395                 400
Trp Phe Gly Thr Cys Ser His Ser Asn Leu Asn Gly Gln Tyr Phe Arg
            405                 410                 415
Ser Ile Pro Gln Gln Arg Gln Lys Leu Lys Lys Gly Ile Phe Trp Lys
        420                 425                 430
Thr Trp Arg Gly Arg Tyr Tyr Pro Leu Gln Ala Thr Thr Met Leu Ile
        435                 440                 445
Gln Pro Met Ala Ala Glu Ala Ala Ser
    450                 455     457
```

```
<210> 1271
<211> 394
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1271
Ala Leu Asp Phe Gly Asp Ser Cys Gln Trp Pro Arg Pro Gln Asp Thr
1               5                   10                  15
Met Lys Gln Leu Pro Val Leu Glu Pro Gly Asp Lys Pro Arg Lys Ala
            20                  25                  30
Thr Trp Tyr Thr Leu Thr Val Pro Gly Asp Ser Pro Cys Ala Arg Val
        35                  40                  45
Gly His Ser Cys Ser Tyr Leu Pro Pro Val Gly Asn Ala Lys Arg Gly
    50                  55                  60
Lys Val Phe Ile Val Gly Gly Ala Asn Pro Asn Arg Ser Phe Ser Asp
65                  70                  75                  80
Val His Thr Met Asp Leu Gly Lys His Gln Trp Asp Leu Asp Thr Cys
            85                  90                  95
Lys Gly Leu Leu Pro Arg Tyr Glu His Ala Ser Phe Ile Pro Ser Cys
        100                 105                 110
Thr Pro Asp Arg Ile Trp Val Phe Gly Gly Ala Asn Gln Ser Gly Asn
    115                 120                 125
Arg Asn Cys Leu Gln Val Leu Asn Pro Glu Thr Arg Thr Trp Thr Thr
    130                 135                 140
```

```
Pro Glu Val Thr Ser Pro Pro Pro Ser Pro Arg Thr Phe His Thr Ser
145             150             155             160
Ser Ala Ala Ile Gly Asn Gln Leu Tyr Val Phe Gly Gly Gly Glu Arg
            165             170             175
Gly Ala Gln Pro Val Gln Asp Thr Lys Leu His Val Phe Asp Ala Asn
            180             185             190
Thr Leu Thr Trp Ser Gln Pro Glu Thr Leu Gly Asn Pro Pro Ser Pro
        195             200             205
Arg His Gly His Val Met Val Ala Ala Gly Thr Lys Leu Phe Ile His
    210             215             220
Gly Gly Leu Ala Gly Asp Arg Phe Tyr Asp Asp Leu His Cys Ile Asp
225             230             235             240
Ile Ser Asp Met Lys Trp Gln Lys Leu Asn Pro Thr Gly Ala Ala Pro
            245             250             255
Ala Gly Cys Ala Ser His Thr Pro Ala Val Ala Met Gly Lys His Val
            260             265             270
Tyr Ile Phe Gly Gly Met Thr Pro Ala Gly Ala Pro Gly Thr Gln Cys
        275             280             285
Thr Gln Tyr His Thr Glu Glu Gln His Trp Asp Pro Cys Leu Lys Phe
    290             295             300
Asp Thr Pro Ser Tyr Pro Pro Gly Thr Ile Gly Thr His Ser His Val
305             310             315             320
Val Ser Phe Pro Trp Pro Val Thr Cys Ala Ser Glu Lys Glu Asp Ser
            325             330             335
Asn Ser Leu Thr Leu Asn His Glu Ala Glu Lys Glu Asp Ser Ala Asp
        340             345             350
Lys Val Met Ser His Ser Gly Asp Ser His Glu Glu Ser Gln Thr Ala
        355             360             365
Thr Leu Leu Cys Leu Val Phe Gly Gly Met Asn Thr Glu Gly Glu Ile
    370             375             380
Tyr Asp Asp Cys Ile Val Thr Val Val Asp
385             390             394
```

```
<210> 1272
<211> 176
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1272
Gly Phe Ser Ile Gly Lys Ala Thr Asp Arg Met Asp Ala Phe Arg Lys
1               5               10              15
Ala Lys Asn Arg Ala Val His His Leu His Tyr Ile Glu Arg Tyr Glu
        20              25              30
Asp His Thr Ile Phe His Asp Ile Ser Leu Arg Phe Lys Arg Thr His
        35              40              45
Ile Lys Met Lys Lys Gln Pro Lys Gly Tyr Gly Leu Arg Cys His Arg
    50              55              60
Ala Ile Ile Thr Ile Cys Arg Leu Ile Gly Ile Lys Asp Met Tyr Ala
65              70              75              80
Lys Val Ser Gly Ser Ile Asn Met Leu Ser Leu Thr Gln Gly Leu Phe
            85              90              95
Arg Gly Leu Ser Arg Gln Glu Thr His Gln Gln Leu Ala Asp Lys Lys
        100             105             110
Gly Leu His Val Val Glu Ile Arg Glu Glu Cys Gly Pro Leu Pro Ile
    115             120             125
Val Val Ala Ser Pro Arg Gly Pro Leu Arg Lys Asp Pro Glu Pro Glu
    130             135             140
Asp Glu Val Pro Asp Val Lys Leu Asp Trp Glu Asp Val Lys Thr Ala
145             150             155             160
```

```
Gln Gly Met Lys Arg Ser Val Trp Ser Asn Leu Lys Arg Ala Ala Thr
            165                 170                 175 176
```

```
        <210> 1273
        <211> 457
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 1273
Ala Asp Pro His Thr Thr Val Ile Arg Phe Phe Pro Ala Ala Ser Ala
1               5                   10                  15
Thr Lys Arg Val Leu Pro Pro Val Leu Arg Val Ser Ser Pro Arg Thr
            20              25                  30
Trp Asn Pro Asn Val Pro Glu Ser Pro Arg Ile Pro Ala Pro Arg Leu
            35                  40                  45
Pro Lys Arg Met Ser Gly Ala Pro Thr Ala Gly Ala Ala Leu Met Leu
    50                  55                  60
Cys Ala Ala Thr Ala Val Leu Leu Ser Ala Gln Gly Gly Pro Val Gln
65                  70                  75                  80
Ser Lys Ser Pro Arg Phe Ala Ser Trp Asp Glu Met Asn Val Leu Ala
                85                  90                  95
His Gly Leu Leu Gln Leu Gly Gln Gly Leu Arg Glu His Ala Glu Arg
            100                 105                 110
Thr Arg Ser Gln Leu Ser Ala Leu Glu Arg Arg Leu Ser Ala Cys Gly
            115                 120                 125
Ser Ala Cys Gln Gly Thr Glu Gly Ser Thr Asp Leu Pro Leu Ala Pro
    130                 135                 140
Glu Ser Arg Val Asp Pro Glu Val Leu His Ser Leu Gln Thr Gln Leu
145                 150                 155                 160
Lys Ala Gln Asn Ser Arg Ile Gln Gln Leu Phe His Lys Val Ala Gln
                165                 170                 175
Gln Gln Arg His Leu Glu Lys Gln His Leu Arg Ile Gln His Leu Gln
            180                 185                 190
Ser Gln Phe Gly Leu Leu Asp His Lys His Leu Asp His Glu Val Ala
    195                 200                 205
Lys Pro Ala Arg Arg Lys Arg Leu Pro Glu Met Ala Gln Pro Val Asp
    210                 215                 220
Pro Ala His Asn Val Ser Arg Leu His Arg Leu Pro Arg Asp Cys Gln
225                 230                 235                 240
Glu Leu Phe Gln Val Gly Glu Arg Gln Ser Gly Leu Phe Glu Ile Gln
                245                 250                 255
Pro Gln Gly Ser Pro Pro Phe Leu Val Asn Cys Lys Met Thr Ser Asp
            260                 265                 270
Gly Gly Trp Thr Val Ile Gln Arg Arg His Asp Gly Ser Val Asp Phe
        275                 280                 285
Asn Arg Pro Trp Glu Ala Tyr Lys Ala Gly Phe Gly Asp Pro His Gly
    290                 295                 300
Glu Phe Trp Leu Gly Leu Glu Lys Val His Ser Ile Thr Gly Asp Arg
305                 310                 315                 320
Asn Ser Arg Leu Ala Val Gln Leu Arg Asp Trp Asp Gly Asn Ala Glu
            325                 330                 335
Leu Leu Gln Phe Ser Val His Leu Gly Gly Glu Asp Thr Ala Tyr Ser
            340                 345                 350
Leu Gln Leu Thr Ala Pro Val Ala Gly Gln Leu Gly Ala Thr Thr Val
    355                 360                 365
Pro Pro Ser Gly Leu Ser Val Pro Phe Ser Thr Trp Asp Gln Asp His
    370                 375                 380
```

```
Asp Leu Arg Arg Asp Lys Asn Cys Ala Lys Ser Leu Ser Gly Gly Trp
385                 390                 395                 400
Trp Phe Gly Thr Cys Ser His Ser Asn Leu Asn Gly Gln Tyr Phe Arg
            405                 410                 415
Ser Ile Pro Gln Gln Arg Gln Lys Leu Lys Lys Gly Ile Phe Trp Lys
        420                 425                 430
Thr Trp Arg Gly Arg Tyr Tyr Pro Leu Gln Ala Thr Thr Met Leu Ile
    435                 440                 445
Gln Pro Met Ala Ala Glu Ala Ala Ser
    450             455     457
```

```
<210> 1274
<211> 359
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1274
Thr Leu Arg Ser Arg Pro Ala Gly Glu Ala Gly Tyr Leu Gly Trp Asp
1               5                   10                  15
Pro Glu Gln Ala Gly Glu Gly Ser Ala Leu Ser Arg Pro Gly Ala Met
            20                  25                  30
Ala Ala Leu Met Thr Pro Gly Thr Gly Ala Pro Pro Ala Pro Gly Asp
        35                  40                  45
Phe Ser Gly Glu Gly Ser Gln Gly Leu Pro Asp Pro Ser Pro Glu Pro
    50                  55                  60
Lys Gln Leu Pro Glu Leu Ile Arg Met Lys Arg Asp Gly Gly Arg Leu
65                  70                  75                  80
Ser Glu Ala Asp Ile Arg Gly Phe Val Ala Ala Val Val Asn Gly Ser
                85                  90                  95
Ala Gln Gly Ala Gln Ile Gly Ala Trp Gly Gly Leu Gly Val Pro Asp
            100                 105                 110
Pro Asp Trp Glu Val Ser Pro Arg Asp Phe Gly Ser Leu Gly Val Arg
        115                 120                 125
Arg Cys Pro Thr Thr Ser Thr Gly Pro Arg Val Pro His Arg Cys Gly
    130                 135                 140
Leu Pro Pro Ser Arg Val Pro Pro His Thr Arg Gly Met Leu Met Ala
145                 150                 155                 160
Ile Arg Leu Arg Gly Met Asp Leu Glu Glu Thr Ser Val Leu Thr Gln
                165                 170                 175
Ala Leu Ala Gln Ser Gly Gln Gln Leu Glu Trp Pro Glu Ala Trp Arg
            180                 185                 190
Gln Gln Leu Val Asp Lys His Ser Thr Gly Gly Val Gly Asp Lys Val
        195                 200                 205
Ser Leu Val Leu Ala Pro Ala Leu Ala Ala Cys Gly Cys Lys Val Ile
    210                 215                 220
Asn His Leu Leu Ser Arg Arg Glu Pro Ile Pro His Met Gln Gln Pro
225                 230                 235                 240
Val His Pro Gln Ala Ala Pro Asn Leu Lys Pro Gly Pro Lys Pro Pro
            245                 250                 255
Arg Pro Tyr Gln Gly Phe Ser Pro Pro Cys Ser Pro Ala Gln Phe Ser
        260                 265                 270
Pro Pro Arg Ser Pro Ala Gln Arg Leu Gly Pro Leu Trp Leu Gln Thr
    275                 280                 285
Arg Pro Leu Gly Ala Gly Lys Arg Ser Thr Asp Gly Ile Gln Thr Pro
    290                 295                 300
Phe Pro Leu Gly Pro Gln Thr Ala Pro Pro Arg Glu Glu Leu Arg Thr
305                 310                 315                 320
Ser Leu Pro Leu Pro Gln Ala Leu Phe Pro Gln Gly Gln Val Pro Thr
                325                 330                 335
```

Ser Ser Pro Thr Asp Thr Ser Gln Pro Arg Lys Leu Pro Phe His Ser
            340   345   350
Leu Thr Ser Trp Ala Pro Leu
            355   359

        <210> 1275
        <211> 146
        <212> Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(146)
        <223> X = any amino acid or stop code

        <400> 1275
Arg Ala Leu Arg Glu Leu Arg Glu Arg Val Thr His Gly Leu Ala Glu
 1   5   10   15
Ala Gly Arg Asp Arg Glu Asp Val Ser Thr Glu Leu Tyr Arg Ala Leu
            20   25   30
Glu Ala Val Arg Leu Gln Asn Ser Glu Gly Ser Cys Glu Pro Cys Pro
            35   40   45
Thr Ser Trp Leu Pro Phe Gly Gly Ser Cys Tyr Tyr Phe Ser Val Pro
        50   55   60
Lys Thr Thr Trp Ala Glu Ala Gln Gly His Cys Ala Asp Ala Ser Ala
65   70   75   80
His Leu Ala Ile Val Gly Gly Leu Gly Glu Gln Asp Phe Leu Ser Arg
                85   90   95
Asp Thr Ser Ala Leu Glu Tyr Trp Ile Gly Arg Arg Ala Val Gln His
            100   105   110
Leu Arg Lys Val Gln Gly Tyr Ser Trp Val Asp Gly Val Pro Leu Ser
        115   120   125
Phe Arg Xaa Trp Glu Gly His Pro Gly Glu Thr Trp Gly Pro Gln Val
    130   135   140
Arg Leu
145 146

        <210> 1276
        <211> 187
        <212> Amino acid
        <213> Homo sapiens

        <400> 1276
Arg Trp Pro Arg Ser Trp Pro Pro Arg Ala Gly Ala Ala Arg Gly Ala
 1   5   10   15
Ala Glu Ala Ala Met Val Gly Ala Leu Cys Gly Cys Trp Phe Arg Leu
            20   25   30
Gly Gly Ala Arg Pro Leu Ile Pro Leu Gly Pro Thr Val Val Gln Thr
        35   40   45
Ser Met Ser Arg Ser Gln Val Ala Leu Leu Gly Leu Ser Leu Leu Leu
        50   55   60
Met Leu Leu Leu Tyr Val Gly Leu Pro Gly Pro Pro Glu Gln Thr Ser
65   70   75   80
Cys Leu Trp Gly Asp Pro Asn Val Thr Val Leu Ala Gly Leu Thr Pro

```
                     85                          90                          95
Gly Asn Ser Pro Ile Phe Tyr Arg Glu Val Leu Pro Leu Asn Gln Ala
                100                         105                         110
His Arg Val Glu Val Cys Cys Phe Met Glu Arg Pro Leu Thr Leu Thr
            115                         120                         125
Arg Gly Ser Ser Trp Ala His Cys Ser Tyr Cys His Arg Gly Ala Thr
            130                         135                         140
Gly Pro Trp Pro Leu Thr Phe Gln Val Leu Gly Thr Arg His Leu Gln
145                         150                         155                         160
Arg Arg Gln Ala Gln Arg Gln Gly Gly Gln Arg Cys Trp Ser Gly Arg
                165                         170                         175
Cys Gly Thr Trp Arg Tyr Arg Met Pro Cys Trp
                180                         185     187
                   )
```

```
        <210> 1277
        <211> 481
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 1277
Gln Glu Asn Gln Leu Glu Lys Lys Met Lys Phe Leu Ile Phe Ala Phe
 1               5                          10                          15
Phe Gly Gly Val His Leu Leu Ser Leu Cys Ser Gly Lys Ala Ile Cys
                20                          25                          30
Lys Asn Gly Ile Ser Lys Arg Thr Phe Glu Glu Ile Lys Glu Glu Ile
            35                          40                          45
Ala Ser Cys Gly Asp Val Ala Lys Ala Ile Ile Asn Leu Ala Val Tyr
    50                          55                          60
Gly Lys Ala Gln Asn Arg Ser Tyr Glu Arg Leu Ala Leu Leu Val Asp
65                          70                          75                          80
Thr Val Gly Pro Arg Leu Ser Gly Ser Lys Asn Leu Glu Lys Ala Ile
                85                          90                          95
Gln Ile Met Tyr Gln Asn Leu Gln Gln Asp Gly Leu Glu Lys Val His
                100                         105                         110
Leu Glu Pro Val Arg Ile Pro His Trp Glu Arg Gly Glu Glu Ser Ala
            115                         120                         125
Val Met Leu Glu Pro Arg Ile His Lys Ile Ala Ile Leu Gly Leu Gly
    130                         135                         140
Ser Ser Ile Gly Thr Pro Pro Glu Gly Ile Thr Ala Glu Val Leu Val
145                         150                         155                         160
Val Thr Ser Phe Asp Glu Leu Gln Arg Arg Ala Ser Glu Ala Arg Gly
                165                         170                         175
Lys Ile Val Val Tyr Asn Gln Pro Tyr Ile Asn Tyr Ser Arg Thr Val
                180                         185                         190
Gln Tyr Arg Thr Gln Gly Ala Val Glu Ala Ala Lys Val Gly Ala Leu
                195                         200                         205
Ala Ser Leu Ile Arg Ser Val Ala Ser Phe Ser Ile Tyr Ser Pro His
210                         215                         220
Thr Gly Ile Gln Glu Tyr Gln Asp Gly Val Pro Lys Ile Pro Thr Ala
225                         230                         235                         240
Cys Ile Thr Val Glu Asp Ala Glu Met Met Ser Arg Met Ala Ser His
                245                         250                         255
Gly Ile Lys Ile Val Ile Gln Leu Lys Met Gly Ala Lys Thr Tyr Pro
                260                         265                         270
Asp Thr Asp Ser Phe Asn Thr Val Ala Glu Ile Thr Gly Ser Lys Tyr
            275                         280                         285
Pro Glu Gln Val Val Leu Val Ser Gly His Leu Asp Ser Trp Asp Val
    290                         295                         300
Gly Gln Gly Ala Met Asp Asp Gly Gly Gly Ala Phe Ile Ser Trp Glu
```

```
305                        310                    315                        320
Ala Leu Ser Leu Ile Lys Asp Leu Gly Leu Arg Pro Lys Arg Thr Leu
                325                    330                    335
Arg Leu Val Leu Trp Thr Ala Glu Glu Gln Gly Gly Val Gly Ala Phe
            340                    345                    350
Gln Tyr Tyr Gln Leu His Lys Val Asn Ile Ser Asn Tyr Ser Leu Val
        355                    360                    365
Met Glu Ser Asp Ala Gly Thr Phe Leu Pro Thr Gly Leu Gln Phe Thr
    370                    375                    380
Gly Ser Glu Lys Ala Arg Ala Ile Met Glu Glu Val Met Ser Leu Leu
385                    390                    395                    400
Gln Pro Leu Asn Ile Thr Gln Val Leu Ser His Gly Glu Gly Thr Asp
                405                    410                    415
Ile Asn Phe Trp Ile Gln Ala Gly Val Pro Gly Ala Ser Leu Leu Asp
            420                    425                    430
Asp Leu Tyr Lys Tyr Phe Phe Phe His His Ser His Gly Asp Thr Met
        435                    440                    445
Thr Val His Gly Ile Gln Thr Gln Met Asn Val Ala Ala Ala Val Trp
    450                    455                    460
Ala Val Val Ser Tyr Val Val Ala Asp Met Glu Glu Met Leu Pro Arg
465                    470                    475                    480
Ser
481
```

```
<210> 1278
<211> 428
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1278
Thr Lys Pro Arg Lys Arg Arg His Gln Pro Ala Ser Gln Arg Gln Arg
  1               5                    10                    15
Pro Trp Ser Ser Asp Ser Thr Gly Asp Leu Leu Ala Arg Gly Lys Gly
                20                    25                    30
Arg Lys Glu Glu Asn Lys Gly Ser Asp Arg Val Ser Leu Ala Pro Pro
        35                    40                    45
Ser Leu Arg Arg Pro Met Met Cys Gln Ser Glu Ala Arg Gln Gly Pro
    50                    55                    60
Glu Leu Arg Ala Ala Lys Trp Leu His Phe Pro Gln Leu Ala Leu Arg
65                    70                    75                    80
Arg Arg Leu Gly Gln Leu Ser Cys Met Ser Arg Pro Ala Leu Lys Leu
                85                    90                    95
Arg Ser Trp Pro Leu Thr Val Leu Tyr Tyr Leu Leu Pro Phe Gly Ala
            100                    105                    110
Leu Arg Pro Leu Ser Arg Val Gly Trp Arg Pro Val Ser Arg Val Ala
        115                    120                    125
Leu Tyr Lys Ser Val Pro Thr Arg Leu Leu Ser Arg Ala Trp Gly Arg
    130                    135                    140
Leu Asn Gln Val Glu Leu Pro His Trp Leu Arg Arg Pro Val Tyr Ser
145                    150                    155                    160
Leu Tyr Ile Trp Thr Phe Gly Val Asn Met Lys Glu Ala Ala Val Glu
                165                    170                    175
Asp Leu His His Tyr Arg Asn Leu Ser Glu Phe Phe Arg Arg Lys Leu
            180                    185                    190
Lys Pro Gln Ala Arg Pro Val Cys Gly Leu His Ser Val Ile Ser Pro
        195                    200                    205
Ser Asp Gly Arg Ile Leu Asn Phe Gly Gln Val Lys Asn Cys Glu Val
    210                    215                    220
Glu Gln Val Lys Gly Val Thr Tyr Ser Leu Glu Ser Phe Leu Gly Pro
```

```
     225                        230                         235                         240
Arg Met Cys Thr Glu Asp Leu Pro Phe Pro Pro Ala Ala Ser Cys Asp
                          245                     250                         255
Ser Phe Lys Asn Gln Leu Val Thr Arg Glu Gly Asn Glu Leu Tyr His
                  260                     265                     270
Cys Val Ile Tyr Leu Ala Pro Gly Asp Tyr His Cys Phe His Ser Pro
                  275                     280                     285
Thr Asp Trp Thr Val Ser His Arg Arg His Phe Pro Gly Ser Leu Met
          290                     295                     300
Ser Val Asn Pro Gly Met Ala Arg Trp Ile Lys Glu Leu Phe Cys His
305                     310                     315                     320
Asn Glu Arg Val Val Leu Thr Gly Asp Trp Lys His Gly Phe Phe Ser
                  325                     330                     335
Leu Thr Ala Val Gly Ala Thr Asn Trp Gly Ser Ile Arg Ile Tyr Phe
                  340                     345                     350
Asp Arg Asp Leu His Thr Asn Ser Pro Arg His Ser Lys Gly Ser Tyr
          355                     360                     365
Asn Asp Phe Ser Phe Val Thr His Thr Asn Arg Glu Gly Val Pro Met
          370                     375                     380
Arg Lys Gly Glu His Leu Gly Glu Phe Asn Leu Gly Ser Thr Ile Val
385                     390                     395                     400
Leu Ile Phe Glu Ala Pro Lys Asp Phe Asn Phe Gln Leu Lys Thr Gly
                  405                     410                     415
Gln Lys Ile Arg Phe Gly Glu Ala Leu Gly Ser Leu
                  420                     425     428


<210> 1279
<211> 633
<212>Amino acid
<213> Homo sapiens




<400> 1279
Leu Pro Glu Arg Ala Phe Gly Pro Arg Thr Pro Arg Ala Pro Arg Arg
  1                 5                     10                      15
Arg Arg Arg Arg Leu Leu Leu Ser Pro Pro Arg Pro Pro Pro Pro
              20                  25                  30
Leu Asp Arg Glu Pro Arg Ala Pro Gly Pro Trp Leu Cys Pro Ser Arg
          35                  40                  45
Ala Gly Thr Ala Gln Asp Pro Ala Arg Ile Arg Glu Arg Arg Gly Arg
      50                  55                  60
Val Ala Gly Gly Ala Ala Gly Pro Ala Met Glu Leu Arg Ala Arg Gly
65                  70                  75                  80
Trp Trp Leu Leu Cys Ala Ala Ala Ala Leu Val Ala Cys Ala Arg Gly
                  85                  90                  95
Asp Pro Ala Ser Lys Ser Arg Ser Cys Gly Glu Val Arg Gln Ile Tyr
              100                 105                 110
Gly Ala Lys Gly Phe Ser Ser Ser Asp Val Pro Gln Ala Glu Ile Ser
          115                 120                 125
Gly Glu His Leu Arg Ile Cys Pro Gln Gly Tyr Thr Cys Cys Thr Ser
          130                 135                 140
Glu Met Glu Glu Asn Leu Ala Asn Arg Ser His Ala Glu Leu Glu Thr
145                 150                 155                 160
Ala Leu Arg Asp Ser Ser Arg Val Leu Gln Ala Met Leu Ala Thr Gln
              165                 170                 175
Leu Arg Ser Phe Asp Asp His Phe Gln His Leu Leu Asn Asp Ser Glu
          180                 185                 190
Arg Thr Leu Gln Ala Thr Phe Pro Gly Ala Phe Gly Glu Leu Tyr Thr
      195                 200                 205
Gln Asn Ala Arg Ala Phe Arg Asp Leu Tyr Ser Glu Leu Arg Leu Tyr
```

```
            210                   215                   220
Tyr Arg Gly Ala Asn Leu His Leu Glu Glu Thr Leu Ala Glu Phe Trp
225                   230                   235                   240
Ala Arg Leu Leu Glu Arg Leu Phe Lys Gln Leu His Pro Gln Leu Leu
                245                   250                   255
Leu Pro Asp Asp Tyr Leu Asp Cys Leu Gly Lys Gln Ala Glu Ala Leu
            260                   265                   270
Arg Pro Phe Gly Glu Ala Pro Arg Glu Leu Arg Leu Arg Ala Thr Arg
            275                   280                   285
Ala Phe Val Ala Ala Arg Ser Phe Val Gln Gly Leu Gly Val Ala Ser
        290                   295                   300
Asp Val Val Arg Lys Val Ala Gln Val Pro Leu Gly Pro Glu Cys Ser
305                   310                   315                   320
Arg Ala Val Ile Glu Ala Gly Ser Tyr Cys Ala Leu His Cys Val Gly
                325                   330                   335
Val Pro Gly Ala Arg Pro Cys Pro Asp Tyr Cys Arg Asn Val Leu Lys
            340                   345                   350
Gly Cys Leu Ala Asn Gln Ala Asp Leu Asp Ala Glu Trp Arg Asn Leu
        355                   360                   365
Leu Asp Ser Met Val Leu Ile Thr Asp Lys Phe Trp Gly Thr Ser Gly
    370                   375                   380
Val Glu Ser Val Ile Gly Ser Val His Thr Trp Leu Ala Glu Ala Ile
385                   390                   395                   400
Asn Ala Leu Gln Asp Asn Arg Asp Thr Leu Thr Ala Lys Val Ile Gln
                405                   410                   415
Gly Cys Gly Asn Pro Lys Val Asn Pro Gln Gly Pro Gly Pro Glu Glu
            420                   425                   430
Lys Arg Arg Arg Gly Lys Leu Ala Pro Arg Glu Arg Pro Pro Ser Gly
        435                   440                   445
Thr Leu Glu Lys Leu Val Ser Glu Ala Lys Ala Gln Leu Arg Asp Val
    450                   455                   460
Gln Asp Phe Trp Ile Ser Leu Pro Gly Thr Leu Cys Ser Glu Lys Met
465                   470                   475                   480
Ala Leu Ser Thr Ala Ser Asp Asp Arg Cys Trp Asn Gly Met Ala Arg
            485                   490                   495
Gly Arg Tyr Leu Pro Glu Val Met Gly Asp Gly Leu Ala Asn Gln Ile
        500                   505                   510
Asn Asn Pro Glu Val Glu Val Asp Ile Thr Lys Pro Asp Met Thr Ile
        515                   520                   525
Arg Gln Gln Ile Met Gln Leu Lys Ile Met Thr Asn Arg Leu Arg Ser
    530                   535                   540
Ala Tyr Asn Gly Asn Asp Val Asp Phe Gln Asp Ala Ser Asp Asp Gly
545                   550                   555                   560
Ser Gly Ser Gly Ser Gly Asp Gly Cys Leu Asp Asp Leu Cys Gly Arg
            565                   570                   575
Lys Val Ser Arg Lys Ser Ser Ser Ser Arg Thr Pro Leu Thr His Ala
        580                   585                   590
Leu Pro Gly Leu Ser Glu Gln Glu Gly Gln Lys Thr Ser Ala Ala Ser
    595                   600                   605
Cys Pro Gln Pro Pro Thr Phe Leu Leu Pro Leu Leu Leu Phe Leu Ala
    610                   615                   620
Leu Thr Val Ala Arg Pro Arg Trp Arg
625                   630             633
```

<210> 1280
<211> 133
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(133)
<223> X = any amino acid or stop code

786

<400> 1280

```
Ala Thr Glu Leu Thr Arg Ala Gly Met Glu Ala Ser Ala Leu Thr Lys
1               5                   10                  15
Ser Ala Val Thr Ser Val Ala Lys Val Val Arg Val Ala Ser Gly Ser
            20                  25                  30
Ala Val Val Leu Pro Leu Ala Arg Ile Ala Thr Ser Cys Asp Xaa Arg
            35                  40                  45
Val Gly Gly Pro Val Gln Ala Val Pro Met Val Leu Ser Ala Met Gly
    50                  55                  60
Leu Gln Leu Arg Ala Gly Ile Ala Ser Ser Ser Ile Ala Ala Lys Met
65                  70                  75                  80
Met Ser Ala Ala Ala Ile Ala Asn Gly Gly Gly Val Ser Pro Gly Gln
                85                  90                  95
Pro Leu Trp Leu Leu Leu Gln Ser Leu Gly Ala Thr Gly Leu Ser Gly
            100                 105                 110
Leu Thr Lys Phe Ile Leu Gly Ser Ile Gly Ser Ala Ile Ala Ala Val
            115                 120                 125
Ile Ala Arg Phe Tyr
        130         133
```

<210> 1281
<211> 457
<212> Amino acid
<213> Homo sapiens

<400> 1281

```
Thr Asn Gly Arg Asn Leu Leu His His Trp Ile Leu Gly Val Cys Gly
1               5                   10                  15
Met His Pro His His Gln Glu Thr Leu Lys Lys Asn Arg Val Val Leu
            20                  25                  30
Ala Lys Gln Leu Leu Leu Ser Glu Leu Leu Glu His Leu Leu Glu Lys
            35                  40                  45
Asp Ile Ile Thr Leu Glu Met Arg Glu Leu Ile Gln Ala Lys Val Gly
    50                  55                  60
Ser Phe Ser Gln Asn Val Glu Leu Leu Asn Leu Leu Pro Lys Arg Gly
65                  70                  75                  80
Pro Gln Ala Phe Asp Ala Phe Cys Glu Ala Leu Arg Glu Thr Lys Gln
                85                  90                  95
Gly His Leu Glu Asp Met Leu Leu Thr Thr Leu Ser Gly Leu Gln His
            100                 105                 110
Val Leu Pro Pro Leu Ser Cys Asp Tyr Asp Leu Ser Leu Pro Phe Pro
    115                 120                 125
Val Cys Glu Ser Cys Pro Leu Tyr Lys Lys Leu Arg Leu Ser Thr Asp
    130                 135                 140
Thr Val Glu His Ser Leu Asp Asn Lys Asp Gly Pro Val Cys Leu Gln
145                 150                 155                 160
Val Lys Pro Cys Thr Pro Glu Phe Tyr Gln Thr His Phe Gln Leu Ala
                165                 170                 175
Tyr Arg Leu Gln Ser Arg Pro Arg Gly Leu Ala Leu Val Leu Ser Asn
            180                 185                 190
Val His Phe Thr Gly Glu Lys Glu Leu Glu Phe Arg Ser Gly Gly Asp
    195                 200                 205
Val Asp His Ser Thr Leu Val Thr Leu Phe Lys Leu Leu Gly Tyr Asp
    210                 215                 220
```

```
Val His Val Leu Cys Asp Gln Thr Ala Gln Glu Met Gln Glu Lys Leu
225                     230                 235                 240
Gln Asn Phe Ala Gln Leu Pro Ala His Arg Val Thr Asp Ser Cys Ile
                245                 250                 255
Val Ala Leu Leu Ser His Gly Val Glu Gly Ala Ile Tyr Gly Val Asp
            260                 265                 270
Gly Lys Leu Leu Gln Leu Gln Glu Val Phe Gln Leu Phe Asp Asn Ala
        275                 280                 285
Asn Cys Pro Ser Leu Gln Asn Lys Pro Lys Met Phe Phe Ile Gln Ala
    290                 295                 300
Cys Arg Gly Gly Ala Ile Gly Ser Leu Gly His Leu Leu Leu Phe Thr
305                 310                 315                 320
Ala Ala Thr Ala Ser Leu Ala Leu Glu Thr Asp Arg Gly Val Asp Gln
                325                 330                 335
Gln Asp Gly Lys Asn His Ala Gly Ser Pro Gly Cys Glu Glu Ser Asp
            340                 345                 350
Ala Gly Lys Glu Lys Leu Pro Lys Met Arg Leu Pro Thr Arg Ser Asp
        355                 360                 365
Met Ile Cys Gly Tyr Ala Cys Leu Lys Gly Thr Ala Ala Met Arg Asn
    370                 375                 380
Thr Lys Arg Gly Ser Trp Tyr Ile Glu Ala Leu Ala Gln Val Phe Ser
385                 390                 395                 400
Glu Arg Ala Cys Asp Met His Val Ala Asp Met Leu Val Lys Val Asn
            405                 410                 415
Ala Leu Ile Lys Asp Arg Glu Gly Tyr Ala Pro Gly Thr Glu Phe His
        420                 425                 430
Arg Cys Lys Glu Met Ser Glu Tyr Cys Ser Thr Leu Cys Arg His Leu
    435                 440                 445
Tyr Leu Phe Pro Gly His Pro Pro Thr
    450                 455     457
```

```
<210> 1282
<211> 195
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1282
Val Arg Gly Lys Glu Val Met Ala Ala Leu Cys Arg Thr Arg Ala Val
1               5               10              15
Ala Ala Glu Ser His Phe Leu Arg Val Phe Leu Phe Phe Arg Pro Phe
        20              25              30
Arg Gly Val Gly Thr Glu Ser Gly Ser Glu Ser Gly Ser Ser Asn Ala
        35              40              45
Lys Glu Pro Lys Thr Arg Ala Gly Gly Phe Ala Ser Ala Leu Glu Arg
    50              55              60
His Ser Glu Leu Leu Gln Lys Val Glu Pro Leu Gln Lys Gly Ser Pro
65              70              75              80
Lys Asn Val Glu Ser Phe Ala Ser Met Leu Arg His Ser Pro Leu Thr
            85              90              95
Gln Met Gly Pro Ala Lys Asp Lys Leu Val Ile Gly Arg Ile Phe His
            100             105             110
Ile Val Glu Asn Asp Leu Tyr Ile Asp Phe Gly Gly Lys Phe His Cys
    115             120             125
Val Cys Arg Arg Pro Glu Val Asp Gly Glu Lys Tyr Gln Lys Gly Thr
    130             135             140
Arg Val Arg Leu Arg Leu Leu Asp Leu Glu Leu Thr Ser Arg Phe Leu
145             150             155             160
Gly Ala Thr Thr Asp Thr Thr Val Leu Glu Ala Asn Ala Val Leu Leu
            165             170             175
```

Gly Ile Gln Glu Ser Lys Asp Ser Arg Ser Lys Glu Glu His Leu Glu
            180   185   190
Lys Tyr Ile
        195

        <210> 1283
        <211> 1499
        <212> Amino acid
        <213> Homo sapiens

        <400> 1283
Ile Pro Gly Ala Ser Pro Ala Pro Arg Arg Ala Ala Pro Leu Arg Leu
 1   5   10   15
Gly Leu Arg Leu Ala Ser Gly Trp Ala Arg Ala Pro Gly Gly Val Ser
            20   25   30
Pro Val Pro Gly Pro Gly Met Gly Gly Asp Ala Pro Thr Met Ala Arg
        35   40   45
Ala Gln Ala Leu Val Leu Glu Leu Thr Phe Gln Leu Cys Ala Pro Glu
    50   55   60
Thr Glu Thr Pro Glu Val Gly Cys Thr Phe Glu Glu Gly Ser Asp Pro
 65   70   75   80
Ala Val Pro Cys Glu Tyr Ser Gln Ala Gln Tyr Asp Asp Phe Gln Trp
            85   90   95
Glu Gln Val Arg Ile His Pro Gly Thr Arg Ala Pro Ala Asp Leu Pro
            100   105   110
His Gly Ser Tyr Leu Met Val Asn Thr Ser Gln His Ala Pro Gly Gln
        115   120   125
Arg Ala His Val Ile Phe Gln Ser Leu Ser Glu Asn Asp Thr His Cys
    130   135   140
Val Gln Phe Ser Tyr Phe Leu Tyr Ser Arg Asp Gly His Ser Pro Gly
145   150   155   160
Thr Leu Gly Val Tyr Val Arg Val Asn Gly Gly Pro Leu Gly Ser Ala
            165   170   175
Val Trp Asn Met Thr Gly Ser His Gly Arg Gln Trp His Gln Ala Glu
            180   185   190
Leu Ala Val Ser Thr Phe Trp Pro Asn Glu Tyr Gln Val Leu Phe Glu
            195   200   205
Ala Leu Ile Ser Pro Asp Arg Arg Gly Tyr Met Gly Leu Asp Asp Ile
    210   215   220
Leu Leu Leu Ser Tyr Pro Cys Ala Lys Ala Pro His Phe Ser Arg Leu
225   230   235   240
Gly Asp Val Glu Val Asn Ala Gly Gln Asn Ala Ser Phe Gln Cys Met
            245   250   255
Ala Ala Gly Arg Ala Ala Glu Ala Glu Arg Phe Leu Leu Gln Arg Gln
            260   265   270
Ser Gly Ala Leu Val Pro Ala Ala Gly Val Arg His Ile Ser His Arg
    275   280   285
Arg Phe Leu Ala Thr Phe Pro Leu Ala Ala Val Ser Arg Ala Glu Gln
    290   295   300
Asp Leu Tyr Arg Cys Val Ser Gln Ala Pro Arg Gly Arg Gly Thr Ser
305   310   315   320
Leu Asn Phe Ala Glu Phe Met Val Lys Glu Pro Pro Thr Pro Ile Ala
            325   330   335
Pro Pro Gln Leu Leu Arg Ala Gly Pro Thr Tyr Leu Ile Ile Gln Leu
            340   345   350
Asn Thr Asn Ser Ile Ile Gly Asp Gly Pro Ile Val Arg Lys Glu Ile
    355   360   365
Glu Tyr Arg Met Ala Arg Gly Pro Trp Ala Glu Val His Ala Val Ser
    370   375   380

789

```
Leu Gln Thr Tyr Lys Leu Trp His Leu Asp Pro Asp Thr Glu Tyr Glu
385                 390                 395                 400
Ile Ser Val Leu Leu Thr Arg Pro Gly Asp Gly Gly Thr Gly Arg Pro
            405                 410                 415
Gly Pro Pro Leu Ile Ser Arg Thr Lys Cys Ala Glu Pro Met Arg Ala
            420                 425                 430
Pro Lys Gly Leu Ala Phe Ala Glu Ile Gln Ala Arg Gln Leu Thr Leu
        435                 440                 445
Gln Trp Glu Pro Leu Gly Tyr Asn Val Thr Arg Cys His Thr Tyr Thr
    450                 455                 460
Val Ser Leu Cys Tyr His Tyr Thr Leu Gly Ser Ser His Asn Gln Thr
465                 470                 475                 480
Ile Arg Glu Cys Val Lys Thr Glu Gln Gly Val Ser Arg Tyr Thr Met
            485                 490                 495
Lys Asn Leu Leu Pro Tyr Arg Asn Val His Val Arg Leu Val Leu Thr
            500                 505                 510
Asn Pro Glu Gly Arg Lys Glu Gly Lys Glu Val Thr Phe Gln Thr Asp
        515                 520                 525
Glu Asp Val Pro Ser Gly Ile Ala Ala Glu Ser Leu Thr Phe Thr Pro
    530                 535                 540
Leu Glu Asp Met Ile Phe Leu Lys Trp Glu Glu Pro Gln Glu Pro Asn
545                 550                 555                 560
Gly Leu Ile Thr Gln Tyr Glu Ile Ser Tyr Gln Ser Ile Glu Ser Ser
            565                 570                 575
Asp Pro Ala Val Asn Val Pro Gly Pro Arg Arg Thr Ile Ser Lys Leu
            580                 585                 590
Arg Asn Glu Thr Tyr His Val Phe Ser Asn Leu His Pro Gly Thr Thr
        595                 600                 605
Tyr Leu Phe Ser Val Arg Ala Arg Thr Gly Lys Gly Phe Gly Gln Ala
    610                 615                 620
Ala Leu Thr Glu Ile Thr Thr Asn Ile Ser Ala Pro Ser Phe Asp Tyr
625         .       630                 635                 640
Ala Asp Met Pro Ser Pro Leu Gly Glu Ser Glu Asn Thr Ile Thr Val
            645                 650                 655
Leu Leu Arg Pro Ala Gln Gly Arg Gly Ala Pro Ile Ser Val Tyr Gln
            660                 665                 670
Val Ile Val Glu Glu Glu Gln Gly Ser Arg Arg Leu Arg Arg Glu Pro
        675                 680     .           685     .
Gly Gly Gln Asp Cys Phe Pro Val Pro Leu Thr Phe Glu Ala Ala Leu
    690                 695                 700
Ala Arg Gly Leu Val Asp Tyr Phe Gly Ala Glu Leu Ala Ala Ser Ser
705                 710 .               715                 720
Leu Pro Glu Ala Met Pro Phe Thr Val Gly Asp Asn Lys Thr Tyr Arg
            725                 730                 735
Gly Phe Trp Asn Pro Pro Leu Glu Pro Arg Lys Ala Tyr Leu Ile Tyr
            740     .           745                 750
Phe Gln Ala Ala Ser His Leu Lys Gly Glu Thr Arg Leu Asn Cys Ile
    755                 760                 765
Arg Ile Ala Arg Lys Ala Ala Cys Lys Glu Ser Lys Arg Pro Leu Glu
    770                 775                 780
Val Ser Gln Arg Ser Glu Glu Met Gly Leu Ile Leu Gly Ile Cys Ala
785                 790                 795                 800
Gly Gly Leu Ala Val Leu Ile Leu Leu Leu Gly Ala Ile Ile Val Ile
            805                 810                 815
Ile Arg Lys Gly Arg Asp His Tyr Ala Tyr Ser Tyr Tyr Pro Lys Pro
            820                 825                 830
Val Asn Met Thr Lys Ala Thr Val Asn Tyr Arg Gln Glu Lys Thr His
            835                 840                 845
Met Met Ser Ala Val Asp Arg Ser Phe Thr Asp Gln Ser Thr Leu Gln
    850                 855                 860
Glu Asp Glu Arg Leu Gly Leu Ser Phe Met Asp Thr His Gly Tyr Ser
865                 870                 875                 880
Thr Arg Gly Asp Gln Arg Ser Gly Gly Val Thr Glu Ala Ser Ser Leu
            885                 890                 895
```

```
Leu Gly Gly Ser Pro Arg Arg Pro Cys Gly Arg Lys Gly Ser Pro Tyr
        900                     905                 910
His Thr Gly Gln Leu His Pro Ala Val Arg Val Ala Asp Leu Leu Gln
        915                 920                 925
His Ile Asn Gln Met Lys Thr Ala Glu Gly Tyr Gly Phe Lys Gln Glu
    930                 935                 940
Tyr Glu Ser Phe Phe Glu Gly Trp Asp Ala Thr Lys Lys Lys Asp Lys
945                 950                 955                 960
Val Lys Gly Ser Arg Gln Glu Pro Met Pro Ala Tyr Asp Arg His Arg
            965                 970                 975
Val Lys Leu His Pro Met Leu Gly Asp Pro Asn Ala Asp Tyr Ile Asn
        980                 985                 990
Ala Asn Tyr Ile Asp Ile Arg Ile Asn Arg Glu Gly Tyr His Arg Ser
        995                 1000                1005
Asn His Phe Ile Ala Thr Gln Gly Pro Lys Pro Glu Met Val Tyr Asp
    1010                    1015                1020
Phe Trp Arg Met Val Trp Gln Glu His Cys Ser Ser Ile Val Met Ile
1025                    1030                1035                1040
Thr Lys Leu Val Glu Val Gly Arg Val Lys Cys Ser Arg Tyr Trp Pro
            1045                1050                1055
Glu Asp Ser Asp Thr Tyr Gly Asp Ile Lys Ile Met Leu Val Lys Thr
            1060                1065                1070
Glu Thr Leu Ala Glu Tyr Val Val Arg Thr Phe Ala Leu Glu Arg Arg
        1075                1080                1085
Gly Tyr Ser Ala Arg His Glu Val Arg Gln Phe His Phe Thr Ala Trp
    1090                1095                1100
Pro Glu His Gly Val Pro Tyr His Ala Thr Gly Leu Leu Ala Phe Ile
1105                    1110                1115                1120
Arg Arg Val Lys Ala Ser Thr Pro Pro Asp Ala Gly Pro Ile Val Ile
            1125                1130                1135
His Cys Ser Ala Gly Thr Gly Arg Thr Gly Cys Tyr Ile Val Leu Asp
            1140                1145                1150
Val Met Leu Asp Met Ala Glu Cys Glu Gly Val Val Asp Ile Tyr Asn
        1155                1160                1165
Cys Val Lys Thr Leu Cys Ser Arg Arg Val Asn Met Ile Gln Thr Glu
    1170                1175                1180
Glu Gln Tyr Ile Phe Ile His Asp Ala Ile Leu Glu Ala Cys Leu Cys
1185                    1190                1195                1200
Gly Glu Thr Thr Ile Pro Val Ser Glu Phe Lys Ala Thr Tyr Lys Glu
            1205                1210                1215
Met Ile Arg Ile Asp Pro Gln Ser Asn Ser Ser Gln Leu Arg Glu Glu
        1220                1225                1230
Phe Gln Thr Leu Asn Ser Val Thr Pro Pro Leu Asp Val Glu Glu Cys
    1235                1240                1245
Ser Ile Ala Leu Leu Pro Arg Asn Arg Asp Lys Asn Arg Ser Met Asp
    1250                1255                1260
Val Leu Pro Pro Asp Arg Cys Leu Pro Phe Leu Ile Ser Thr Asp Gly
1265                    1270                1275                1280
Asp Ser Asn Asn Tyr Ile Asn Ala Ala Leu Thr Asp Ser Tyr Thr Arg
            1285                1290                1295
Ser Ala Ala Phe Ile Val Thr Leu His Pro Leu Gln Ser Thr Thr Pro
    1300                    1305                1310
Asp Phe Trp Gly Leu Val Tyr Asp Tyr Gly Cys Thr Ser Ile Val Met
    1315                1320                1325
Leu Asn Gln Leu Asn Gln Ser Asn Ser Ala Trp Pro Cys Leu Gln Tyr
    1330                1335                1340
Trp Pro Glu Pro Gly Arg Gln Gln Tyr Gly Leu Met Glu Val Glu Phe
1345                    1350                1355                1360
Met Ser Gly Thr Ala Asp Glu Asp Leu Val Ala Arg Val Phe Arg Val
            1365                1370                1375
Gln Asn Ile Ser Arg Leu Gln Glu Gly His Leu Leu Val Arg His Phe
        1380                1385                1390
Gln Phe Leu Arg Trp Ser Ala Tyr Arg Asp Thr Pro Asp Ser Lys Lys
    1395                1400                1405
```

```
Ala Phe Leu His Leu Leu Ala Glu Gly Asp Lys Trp Gln Ala Glu Ser
    1410                     1415                 1420
Gly Asp Gly Arg Thr Ile Val His Cys Leu Asn Gly Gly Gly Arg Ser
1425                     1430                 1435                 1440
Gly Thr Phe Cys Ala Cys Ala Thr Val Leu Glu Met Ile Arg Cys His
        1445                     1450                 1455
Asn Leu Val Asp Val Phe Phe Ala Ala Lys Thr Leu Arg Asn Tyr Lys
        1460                     1465                 1470
Pro Asn Met Val Glu Thr Met Asp Gln Tyr His Phe Cys Tyr Asp Val
        1475                     1480                 1485
Ala Leu Glu Tyr Leu Glu Gly Leu Glu Ser Arg
    1490                     1495             1499
```

```
        <210> 1284
        <211> 430
        <212>Amino acid
        <213> Homo sapiens


        <400> 1284
Thr Lys Pro Arg Lys Arg Arg His Gln Pro Ala Ser Gln Arg Gln Arg
    1               5                   10                  15
Pro Trp Ser Ser Asp Ser Thr Gly Asp Leu Leu Ala Arg Gly Lys Gly
                20                  25                  30
Arg Lys Glu Glu Asn Lys Gly Ser Asp Arg Val Ser Leu Ala Pro Pro
        35                      40                  45
Ser Leu Arg Arg Pro Met Met Cys Gln Ser Glu Ala Arg Gln Gly Pro
    50                  55                  60
Glu Leu Arg Ala Ala Lys Trp Leu His Phe Pro Gln Leu Ala Leu Arg
65                  70                  75                  80
Arg Arg Leu Gly Gln Leu Ser Cys Met Ser Arg Pro Ala Leu Lys Leu
                85                  90                  95
Arg Ser Trp Pro Leu Thr Val Leu Tyr Tyr Leu Leu Pro Phe Gly Ala
                100                 105                 110
Leu Arg Pro Leu Ser Arg Val Gly Trp Arg Pro Val Ser Arg Val Ala
        115                 120                 125
Leu Tyr Lys Ser Val Pro Thr Arg Leu Leu Ser Arg Ala Trp Gly Arg
    130                 135                 140
Leu Asn Gln Val Glu Leu Pro His Trp Leu Arg Arg Pro Val Tyr Ser
145                 150                 155                 160
Leu Tyr Ile Trp Thr Phe Gly Val Asn Met Lys Glu Ala Ala Val Glu
                165                 170                 175
Asp Leu His His Tyr Arg Asn Leu Ser Glu Phe Phe Arg Arg Lys Leu
                180                 185                 190
Lys Pro Gln Ala Arg Pro Val Cys Gly Leu His Ser Val Ile Ser Pro
        195                 200                 205
Ser Asp Gly Arg Ile Leu Asn Phe Gly Gln Val Lys Asn Cys Glu Val
    210                 215                 220
Glu Gln Val Lys Gly Val Thr Tyr Ser Leu Glu Ser Phe Leu Gly Pro
225                 230                 235                 240
Arg Met Cys Thr Glu Asp Leu Pro Phe Pro Ala Ala Ser Cys Asp
                245                 250                 255
Ser Phe Lys Asn Gln Leu Val Thr Arg Glu Gly Asn Glu Leu Tyr His
        260                 265                 270
Cys Val Ile Tyr Leu Ala Pro Gly Asp Tyr His Cys Phe His Ser Pro
        275                 280                 285
Thr Asp Trp Thr Val Ser His Arg Arg His Phe Pro Gly Ser Leu Met
    290                 295                 300
Ser Val Asn Pro Gly Met Ala Arg Trp Ile Lys Glu Leu Phe Cys His
305                 310                 315                 320
```

792

```
Asn Glu Arg Val Val Leu Thr Gly Asp Trp Lys His Gly Phe Phe Ser
            325                     330                 335
Leu Thr Ala Val Gly Ala Thr Asn Trp Gly Ser Ile Arg Ile Tyr Phe
            340                     345                 350
Asp Arg Asp Leu His Thr Asn Ser Pro Arg His Ser Lys Gly Ser Tyr
            355                     360                 365
Asn Asp Phe Ser Phe Val Thr His Thr Asn Arg Glu Gly Val Pro Met
        370                     375                 380
Ala Leu Arg Gly Glu His Leu Gly Gln Ser Phe Asn Leu Gly Ser Thr
385                     390                 395                 400
Ile Val Leu Ile Phe Glu Ala Pro Lys Asp Phe Asn Phe Gln Leu Lys
                405                     410                 415
Thr Gly Gln Lys Ile Arg Phe Gly Glu Ala Leu Gly Ser Leu
            420                     425                 430
```

```
<210> 1285
<211> 957
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1285
Ala Glu Leu Gly Leu Phe Gly Ser Leu Arg Phe Ser Ser Leu Leu His
1               5                   10                  15
Phe Pro Pro Arg Pro Arg Ser Pro Ala Ser Ala Cys Gly Pro Gly Glu
            20                  25                  30
Gly Arg Met Glu Arg Gly Leu Pro Leu Leu Cys Ala Val Leu Ala Leu
        35                  40                  45
Val Leu Ala Pro Ala Gly Ala Phe Arg Asn Asp Lys Cys Gly Asp Thr
    50                  55                  60
Ile Lys Ile Glu Ser Pro Gly Tyr Leu Thr Ser Pro Gly Tyr Pro His
65                  70                  75                  80
Ser Tyr His Pro Ser Glu Lys Cys Glu Trp Leu Ile Gln Ala Pro Asp
                85                  90                  95
Pro Tyr Gln Arg Ile Met Ile Asn Phe Asn Pro His Phe Asp Leu Glu
            100                 105                 110
Asp Arg Asp Cys Lys Tyr Asp Tyr Val Glu Val Phe Asp Gly Glu Asn
        115                 120                 125
Glu Asn Gly His Phe Arg Gly Lys Phe Cys Gly Lys Ile Ala Pro Pro
    130                 135                 140
Pro Val Val Ser Ser Gly Pro Phe Leu Phe Ile Lys Phe Val Ser Asp
145                 150                 155                 160
Tyr Glu Thr His Gly Ala Gly Phe Ser Ile Arg Tyr Glu Ile Phe Lys
                165                 170                 175
Arg Gly Pro Glu Cys Ser Gln Asn Tyr Thr Thr Pro Ser Gly Val Ile
            180                 185                 190
Lys Ser Pro Gly Phe Pro Glu Lys Tyr Pro Asn Ser Leu Glu Cys Thr
        195                 200                 205
Tyr Ile Val Phe Ala Pro Lys Met Ser Glu Ile Ile Leu Asp Phe Glu
    210                 215                 220
Ser Phe Asp Leu Glu Pro Asp Ser Asn Pro Pro Gly Gly Met Phe Cys
225                 230                 235                 240
Arg Tyr Asp Arg Leu Glu Ile Trp Asp Gly Phe Pro Asp Val Gly Pro
            245                 250                 255
His Ile Gly Arg Tyr Cys Gly Gln Lys Thr Pro Gly Arg Ile Arg Ser
        260                 265                 270
Ser Ser Gly Ile Leu Ser Met Val Phe Tyr Thr Asp Ser Ala Ile Ala
    275                 280                 285
Lys Glu Gly Phe Ser Ala Asn Tyr Ser Val Leu Gln Ser Ser Val Ser
290                 295                 300
```

```
Glu Asp Phe Lys Cys Met Glu Ala Leu Gly Met Glu Ser Gly Glu Ile
305             310             315                 320
His Ser Asp Gln Ile Thr Ala Ser Ser Gln Tyr Ser Thr Asn Trp Ser
            325             330                 335
Ala Glu Arg Ser Arg Leu Asn Tyr Pro Glu Asn Gly Trp Thr Pro Gly
            340             345                 350
Glu Asp Ser Tyr Arg Glu Trp Ile Gln Val Asp Leu Gly Leu Leu Arg
            355             360                 365
Phe Val Thr Ala Val Gly Thr Gln Gly Ala Ile Ser Lys Glu Thr Lys
    370             375             380
Lys Lys Tyr Tyr Val Lys Thr Tyr Lys Ile Asp Val Ser Ser Asn Gly
385             390             395                 400
Glu Asp Trp Ile Thr Ile Lys Glu Gly Asn Lys Pro Val Leu Phe Gln
            405             410                 415
Gly Asn Thr Asn Pro Thr Asp Val Val Val Ala Val Phe Pro Lys Pro
            420             425                 430
Leu Ile Thr Arg Phe Val Arg Ile Lys Pro Ala Thr Trp Glu Thr Gly
            435             440                 445
Ile Ser Met Arg Phe Glu Val Tyr Gly Cys Lys Ile Thr Asp Tyr Pro
    450             455             460
Cys Ser Gly Met Leu Gly Met Val Ser Gly Leu Ile Ser Asp Ser Gln
465             470             475                 480
Ile Thr Ser Ser Asn Gln Gly Asp Arg Asn Trp Met Pro Glu Asn Ile
            485             490                 495
Arg Leu Val Thr Ser Arg Ser Gly Trp Ala Leu Pro Pro Ala Pro His
            500             505                 510
Ser Tyr Ile Asn Glu Trp Leu Gln Ile Asp Leu Gly Glu Glu Lys Ile
            515             520                 525
Val Arg Gly Ile Ile Ile Gln Gly Gly Lys His Arg Glu Asn Lys Val
    530             535             540
Phe Met Arg Lys Phe Lys Ile Gly Tyr Ser Asn Asn Gly Ser Asp Trp
545             550             555                 560
Lys Met Ile Met Asp Asp Ser Lys Arg Lys Ala Lys Ser Phe Glu Gly
            565             570                 575
Asn Asn Asn Tyr Asp Thr Pro Glu Leu Arg Thr Phe Pro Ala Leu Ser
            580                 585                 590
Thr Arg Phe Ile Arg Ile Tyr Pro Glu Arg Ala Thr His Gly Gly Leu
    595             600             605
Gly Leu Arg Met Glu Leu Leu Gly Cys Glu Val Glu Ala Pro Thr Ala
    610             615             620
Gly Pro Thr Thr Pro Asn Gly Asn Leu Val Asp Glu Cys Asp Asp Asp
625             630             635                 640
Gln Ala Asn Cys His Ser Gly Thr Gly Asp Asp Phe Gln Leu Thr Gly
            645             650                 655
Gly Thr Thr Val Leu Ala Thr Glu Lys Pro Thr Val Ile Asp Ser Thr
            660             665                 670
Ile Gln Ser Glu Phe Pro Thr Tyr Gly Phe Asn Cys Glu Phe Gly Trp
    675             680             685
Gly Ser His Lys Thr Phe Cys His Trp Glu His Asp Asn His Val Gln
    690             695             700
Leu Lys Trp Ser Val Leu Thr Ser Lys Thr Gly Pro Ile Gln Asp His
705             710             715                 720
Thr Gly Asp Gly Asn Phe Ile Tyr Ser Gln Ala Asp Glu Asn Gln Lys
            725             730                 735
Gly Lys Val Ala Arg Leu Val Ser Pro Val Val Tyr Ser Gln Asn Ser
            740             745                 750
Ala His Cys Met Thr Phe Trp Tyr His Met Ser Gly Ser His Val Gly
    755             760                 765
Thr Leu Arg Val Lys Leu Arg Tyr Gln Lys Pro Glu Glu Tyr Asp Gln
    770             775             780
Leu Val Trp Met Ala Ile Gly His Gln Gly Asp His Trp Lys Glu Gly
785             790             795                 800
Arg Val Leu Leu His Lys Ser Leu Lys Leu Tyr Gln Val Ile Phe Glu
            805             810                 815
```

794

```
Gly Glu Ile Gly Lys Gly Asn Leu Gly Gly Ile Ala Val Asp Asp Ile
        820                     825                 830
Ser Ile Asn Asn His Ile Ser Gln Glu Asp Cys Ala Lys Pro Ala Asp
        835                     840                 845
Leu Asp Lys Lys Asn Pro Glu Ile Lys Ile Asp Glu Thr Gly Ser Thr
    850                     855                 860
Pro Gly Tyr Glu Gly Glu Gly Glu Gly Asp Lys Asn Ile Ser Arg Lys
865                 870                 875                     880
Pro Gly Asn Val Leu Lys Thr Leu Glu Pro Ile Leu Ile Thr Ile Ile
            885                     890                 895
Ala Met Ser Ala Leu Gly Val Leu Leu Gly Ala Val Cys Gly Val Val
        900                     905                 910
Leu Tyr Cys Ala Cys Trp His Asn Gly Met Ser Glu Arg Asn Leu Ser
        915                     920                 925
Ala Leu Glu Asn Tyr Asn Phe Glu Leu Val Asp Gly Val Lys Leu Lys
    930                     935                 940
Lys Asp Lys Leu Asn Thr Gln Ser Thr Tyr Ser Glu Ala
945                     950                 955     957
```

```
<210> 1286
<211> 173
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(173)
<223> X = any amino acid or stop code


<400> 1286
His Glu Gly Ser Ala Leu Thr Trp Ala Ser His Tyr Gln Glu Arg Leu
1                   5                   10                  15
Asn Ser Glu Gln Ser Cys Leu Asn Glu Trp Thr Ala Met Ala Asp Leu
            20                  25                  30
Glu Ser Leu Arg Pro Pro Ser Ala Glu Pro Gly Gly Ser Val Cys Gly
        35                  40                  45
Gly Glu Gly Leu Gly Gly Gly Glu Gly Arg Ile Met Gln Trp Gly Ala
    50                  55                  60
Trp Trp Arg Gly Glu Arg Ala Pro Xaa Leu Arg Gly Ser Ala Pro Arg
65              70                  75                      80
Ser Ser Glu Gln Glu Gln Met Glu Gln Ala Ile Arg Ala Glu Leu Trp
            85                  90                  95
Lys Val Leu Asp Val Ser Asp Leu Glu Ser Val Thr Ser Lys Glu Ile
        100                 105                 110
Arg Gln Ala Leu Glu Leu Arg Leu Gly Leu Pro Leu Gln Pro Val Pro
    115                 120                 125
Xaa Leu His Arg Gln Pro Asp Ala Ala Ala Gly Gly Thr Ala Gly Pro
    130                 135                 140
Ser Leu Pro His Leu Pro Pro Leu Pro Gly Leu Arg Val Glu Arg
145                 150                 155                 160
Ser Lys Pro Gly Gly Ala Ala Glu Glu Gln Val Gly Leu
            165                 170         173


<210> 1287
<211> 181
<212>Amino acid
<213> Homo sapiens
```

<400> 1287

```
Met Ala Ala Leu Asp Leu Arg Ala Glu Leu Asp Ser Leu Val Leu Gln
1               5                   10                  15
Leu Leu Gly Asp Leu Glu Glu Leu Glu Gly Lys Arg Thr Val Leu Asn
                20                  25                  30
Ala Arg Val Glu Glu Gly Trp Leu Ser Leu Ala Lys Ala Arg Tyr Ala
            35                  40                  45
Met Gly Ala Lys Ser Val Gly Pro Leu Gln Tyr Ala Ser His Met Glu
    50                  55                  60
Pro Gln Val Cys Leu His Ala Ser Glu Ala Gln Glu Gly Leu Gln Lys
65                  70                  75                  80
Phe Lys Val Val Arg Ala Gly Val His Ala Pro Glu Glu Val Gly Pro
                85                  90                  95
Arg Glu Ala Gly Leu Arg Arg Arg Lys Gly Pro Thr Lys Thr Pro Glu
            100                 105                 110
Pro Glu Ser Ser Glu Ala Pro Gln Asp Pro Leu Asn Trp Phe Gly Ile
            115                 120                 125
Leu Val Pro His Ser Leu Arg Gln Ala Gln Ala Ser Phe Arg Asp Gly
    130                 135                 140
Leu Gln Leu Ala Ala Asp Ile Ala Ser Leu Gln Asn Arg Ile Asp Trp
145                 150                 155                 160
Gly Arg Ser Gln Leu Arg Gly Leu Gln Glu Lys Leu Lys Gln Leu Glu
                165                 170                 175
Pro Gly Ala Ala  *
            180
```

<210> 1288
<211> 216
<212> Amino acid
<213> Homo sapiens

<400> 1288

```
His Ser Asp Val Gly Ala Ala Thr Ala Val Leu Pro Leu Leu Thr Ala
1               5                   10                  15
Val Leu Gly Val Thr Val Val Thr Arg Arg Asp Thr Glu Gly Pro Gly
                20                  25                  30
Arg Ala Ala Leu Val His Leu Thr Gly Ser Pro Arg Gln Lys Val Gly
            35                  40                  45
Thr Ser Gly Arg Glu Gly Leu Pro Gly Leu Gly Ala Ser Cys Ala Glu
    50                  55                  60
Ser Glu Leu Glu Arg Glu Thr Gln Glu Pro Arg Ser Arg Gly Arg Cys
65                  70                  75                  80
Ile Phe Gly Ala Ala Arg Trp Arg Gln Val Pro Leu Ala Ser Pro Gln
                85                  90                  95
Arg Pro Phe Leu Leu Ser Pro Gly Pro Arg Leu His Arg Met Gly Leu
            100                 105                 110
Pro Val Ser Trp Ala Pro Pro Ala Leu Trp Val Leu Gly Cys Cys Ala
            115                 120                 125
Leu Leu Leu Ser Leu Trp Ala Leu Cys Thr Ala Cys Arg Arg Pro Glu
    130                 135                 140
Asp Ala Val Ala Pro Arg Lys Arg Ala Arg Arg Gln Arg Ala Arg Leu
145                 150                 155                 160
Gln Gly Ser Ala Thr Ala Ala Glu Ala Val Ser Ala Lys Leu Ser Arg
                165                 170                 175
Gly Pro Gly Trp Gly Pro Gln Gly Thr Asp Gln Pro Ser Ser Pro Pro
```

```
                  180                    185                    190
     Val Pro Thr Glu Ala Asp Pro Pro Leu Leu Pro Gln Gln Val Gly His
              195                    200                    205
     Gln Thr Ala Arg Ala Ala Pro Gly
          210                    215 216
```

```
         <210> 1289
         <211> 148
         <212>Amino acid
         <213> Homo sapiens

         <220>
         <221> misc_feature
         <222> (1)...(148)
         <223> X = any amino acid or stop code
```

```
         <400> 1289
     Leu Thr Gly Pro Gly Gln Arg Leu Ala Gly Thr Thr Glu Gly Pro Arg
      1               5                    10                   15
     Arg Cys Arg Gly Ser Ser Gln Ala Pro Thr Pro Thr Trp Lys Leu Val
                  20                   25                   30
     Asp Thr Arg Leu Cys Ala Ala Ala Pro Trp Leu Ala Ser Arg Ala Pro
                  35                   40                   45
     Gly His Tyr Ser Gln Met Leu Leu Val Asn Xaa Pro Cys Arg Lys Asp
          50                   55                   60
     Trp Leu Val Ser Lys Trp Met Arg Thr Pro Val Cys Gly Gln Ser Pro
      65                   70                   75                   80
     Ala Met Thr Asp Arg Pro Arg Ser Glu Ala Gly Arg Asp His Arg Arg
                  85                   90                   95
     Ala Lys Ala Leu Pro Gly Leu Ile Pro Gly Ser Asn Pro Asn Leu Glu
                  100                  105                  110
     Ala Cys Gly His Gln Ala Leu Cys Ser Ser Ser Val Ala Ser Val Gln
          115                  120                  125
     Gly Pro Trp Pro Leu Leu Pro Asn Ala Ser Ser Pro Pro Thr Pro Gly
          130                  135                  140
     Gln Pro Gln Pro
     145         148
```

```
         <210> 1290
         <211> 170
         <212>Amino acid
         <213> Homo sapiens

         <220>.
         <221> misc_feature
         <222> (1)...(170)
         <223> X = any amino acid or stop code
```

```
         <400> 1290
     Lys His Arg Leu Cys Ser Leu Glu Gln Leu Met Thr Leu Ile Ser Ala
      1               5                    10                   15
     Ala Arg Glu Tyr Glu Ile Glu Phe Ile Tyr Ala Ile Ser Pro Gly Leu
                  20                   25                   30
     Asp Ile Thr Phe Ser Asn Pro Lys Glu Val Ser Thr Leu Lys Arg Lys
```

```
                    35                      40                      45
Leu Asp Gln Val Ser Gln Phe Gly Cys Arg Ser Phe Ala Leu Leu Phe
        50                      55                      60
Asp Asp Ile Asp His Asn Met Cys Ala Ala Asp Lys Glu Val Phe Ser
    65                      70                      75                  80
Ser Phe Ala His Ala Gln Val Ser Ile Thr Asn Glu Ile Tyr Gln Tyr
                85                      90                      95
Leu Gly Glu Pro Glu Thr Phe Leu Phe Cys Pro Thr Glu Tyr Cys Ile
            100                     105                     110
Xaa Trp Leu Tyr Ile Xaa Leu Val Phe Leu Glu Tyr Ile Thr Tyr Lys
        115                     120                     125
Gly Pro Trp Ala Pro Phe Ser Leu His Phe Pro Pro Pro Leu Val Cys
    130                     135                     140
Lys Ser Arg Asn Leu Phe Leu Glu Asp Ile Phe Gln Asp Pro Lys Leu
145                     150                     155                 160
Glu Lys Phe Xaa Glu Leu Ile Asn Asp Asn
                165                     170
```

```
        <210> 1291
        <211> 98
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1291
Thr Ser Ala Leu Thr Gln Gly Leu Glu Arg Ile Pro Asp Gln Leu Gly
1                   5                   10                      15
Tyr Leu Val Leu Ser Glu Gly Ala Val Leu Ala Ser Ser Gly Asp Leu
                20                      25                      30
Glu Asn Asp Glu Gln Ala Ala Ser Ala Ile Ser Glu Leu Val Ser Thr
            35                      40                      45
Ala Cys Gly Phe Arg Leu His Arg Gly Met Asn Val Pro Phe Lys Arg
        50                      55                      60
Leu Ser Val Val Phe Gly Glu His Thr Leu Leu Val Thr Val Ser Gly
    65                      70                      75                  80
Gln Arg Val Phe Val Val Lys Arg Gln Asn Arg Gly Arg Glu Pro Ile
                85                      90                      95
Asp Val
    98
```

```
        <210> 1292
        <211> 142
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1292
Ala Lys Arg Ala Glu Arg Thr Ser Arg Leu Gln Gly Leu Gln His Pro
1                   5                   10                      15
Ser Pro Pro Tyr Pro Pro Ala Thr Leu Gly Val Thr Pro Gly Gln Asp
                20                      25                      30
Arg Thr Leu Gln Leu Gln His Gln Cys Pro Ala Gly Arg Lys Ser Arg
            35                      40                      45
Lys Lys Lys Ser Lys Ala Thr Gln Leu Ser Pro Glu Asp Arg Val Glu
        50                      55                      60
Asp Ala Leu Pro Pro Ser Lys Ala Pro Ser Arg Thr Arg Arg Ala Lys
```

```
     65                    70·                   75                    80
Arg Asp Leu Pro Lys Arg Thr Ala Thr Gln Arg Pro Glu Gly Thr Ser
                    85                    90                    95
Leu Gln Gln Asp Pro Glu Ala Pro Thr Val Pro Lys Lys Gly Arg Arg
                100                   105                   110
Lys Gly Arg Gln Ala Ala Ser Gly His Cys Arg Pro Arg Lys Val Lys
                115                   120                   125
Ala Asp Ile Pro Ser Leu Glu Pro Glu Gly Thr Ser Ala Ser
        130                   135                   140   142
```

```
    <210> 1293
    <211> 89
    <212>Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(89)
    <223> X = any amino acid or stop code
```

```
    <400> 1293
Arg Lys Ser Ser Trp Leu Gly Ala Val Ala His Ala Cys Asn Pro Ser
  1             5                   10                    15
Ser Leu Gly Gly Pro Gly Arg Gln Ile Thr Arg Ser Gly Val Arg Asp
                20                    25                    30
Gln Pro Gly Gln Tyr Gly Glu Thr Pro Ser Leu Leu Lys Ile Gln Thr
            35                    40                    45
Leu Ala Gly Arg Gly Gly Ala Cys Leu Xaa Ser His Ile Leu Arg Arg
        50                    55                    60
Leu Arg Gln Lys Asn Arg Leu Asn Leu Gly Gly Arg Gly Cys Ser Glu
65                    70                    75                    80
Leu Arg Ser Arg His Cys Ala Pro Ala
                85                    89
```

```
    <210> 1294
    <211> 80
    <212>Amino acid
    <213> Homo sapiens
```

```
    <400> 1294
Ala Trp Asn Ser Ala Arg Gly Ala Val Ser Pro Leu Trp Val Pro Gly
  1             5                   10                    15
Cys Phe Leu Thr Leu Ser Val Thr Trp Ile Gly Ala Ala Pro Leu Ile
                20                    25                    30
Leu Ser Arg Ile Val Gly Gly Trp Glu Cys Glu Lys His Ser Gln Pro
            35                    40                    45
Trp Gln Val Leu Val Ala Ser Arg Gly Arg Ala Val Cys Gly Gly Val
        50                    55                    60
Leu Val His Pro Gln Trp Val Leu Thr Ala Ala His Cys Ile Arg Lys
65                    70                    75                    80
```

```
<210> 1295
<211> 281
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1295
Ala Glu Met Ala Asp Asp Leu Gly Asp Glu Trp Trp Glu Asn Gln Pro
 1               5                  10                  15
Thr Gly Ala Gly Ser Ser Pro Glu Ala Ser Asp Gly Glu Gly Glu Gly
            20                  25                  30
Asp Thr Glu Val Met Gln Gln Glu Thr Val Pro Val Pro Val Pro Ser
        35                  40                  45
Glu Lys Thr Lys Gln Pro Lys Glu Cys Phe Leu Ile Gln Pro Lys Glu
    50                  55                  60
Arg Lys Glu Asn Thr Thr Lys Thr Arg Lys Arg Lys Lys Lys Ile
65                  70                  75                  80
Thr Asp Val Leu Ala Lys Ser Glu Pro Lys Pro Gly Leu Pro Glu Asp
            85                  90                  95
Leu Gln Lys Leu Met Lys Asp Tyr Tyr Ser Ser Arg Arg Leu Val Ile
        100                 105                 110
Glu Leu Glu Glu Leu Asn Leu Pro Asp Ser Cys Phe Leu Lys Ala Asn
    115                 120                 125
Asp Leu Thr His Ser Leu Ser Ser Tyr Leu Lys Glu Ile Cys Pro Lys
    130                 135                 140
Trp Val Lys Leu Arg Lys Asn His Ser Glu Lys Lys Ser Val Leu Met
145                 150                 155                 160
Leu Ile Ile Cys Ser Ser Ala Val Arg Ala Leu Glu Leu Ile Arg Ser
            165                 170                 175
Met Thr Ala Phe Arg Gly Asp Gly Lys Val Ile Lys Leu Phe Ala Lys
        180                 185                 190
His Ile Lys Val Gln Ala Gln Val Lys Leu Leu Glu Lys Arg Val Val
        195                 200                 205
His Leu Gly Val Gly Thr Pro Gly Arg Ile Lys Glu Leu Val Lys Gln
    210                 215                 220
Gly Gly Leu Asn Leu Ser Pro Leu Lys Phe Leu Val Phe Asp Trp Asn
225                 230                 235                 240
Trp Arg Asp Gln Lys Leu Arg Arg Met Met Asp Ile Pro Glu Ile Arg
            245                 250                 255
Lys Glu Val Phe Glu Leu Leu Glu Met Gly Val Leu Ser Leu Cys Lys
            260                 265                 270
Ser Glu Ser Leu Lys Leu Gly Leu Phe
        275                 280 281
```

```
<210> 1296
<211> 213
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1296
Arg Pro Gly Thr Ala Ile Trp Val Val Glu Cys Glu His Gly Arg Pro
 1               5                  10                  15
Ile Ala Glu Ser Glu Gly Gln Glu Gly Arg Gly His Ser Pro Pro Gly
            20                  25                  30
Pro Cys Ser Val Ala Gly Phe Leu Arg Gly Arg Leu Gly Arg Asn Leu
        35                  40                  45
```

```
Glu Ile Met Gly Ser Thr Trp Gly Ser Pro Gly Trp Val Arg Leu Ala
    50              55              60
Leu Cys Leu Thr Gly Leu Val Leu Ser Leu Tyr Ala Leu His Val Lys
65              70              75                          80
Ala Ala Arg Ala Arg Asp Arg Asp Tyr Arg Ala Leu Cys Asp Val Gly
            85              90                  95
Thr Ala Ile Ser Cys Ser Arg Val Phe Ser Ser Arg Trp Gly Arg Gly
            100             105             110
Phe Gly Leu Val Glu His Val Leu Gly Gln Asp Ser Ile Leu Asn Gln
    115             120             125
Ser Asn Ser Ile Phe Gly Cys Ile Phe Tyr Thr Leu Gln Leu Leu Leu
    130             135             140
Gly Cys Leu Arg Thr Arg Trp Ala Ser Val Leu Met Leu Leu Ser Ser
145             150             155             160
Leu Val Ser Leu Ala Gly Ser Val Tyr Leu Ala Trp Ile Leu Phe Phe
            165             170             175
Val Leu Tyr Asp Phe Cys Ile Val Cys Ile Thr Thr Tyr Ala Ile Asn
            180             185             190
Val Ser Leu Met Trp Leu Ser Phe Arg Lys Val Gln Glu Pro Gln Gly
    195             200             205
Lys Ala Lys Arg His
210             213
```

```
<210> 1297
<211> 353
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1297
Glu Ser Pro Ala Pro Pro Ala Phe Arg Pro Ala Met Ala Ala Val Ala
1           5               10              15
Leu Met Pro Pro Pro Leu Leu Leu Leu Leu Leu Ala Ser Pro Pro
            20              25              30
Ala Ala Ser Ala Pro Ser Ala Arg Asp Pro Phe Ala Pro Gln Leu Gly
            35              40              45
Asp Thr Gln Asn Cys Gln Leu Arg Cys Arg Asp Arg Asp Leu Gly Pro
    50              55              60
Gln Pro Ser Gln Ala Gly Leu Glu Gly Ala Ser Glu Ser Pro Tyr Asp
65              70              75                          80
Arg Ala Val Leu Ile Ser Ala Cys Glu Arg Gly Cys Arg Leu Phe Ser
            85              90                  95
Ile Cys Arg Phe Val Ala Arg Ser Ser Lys Pro Asn Ala Thr Gln Thr
            100             105             110
Glu Cys Glu Ala Ala Cys Val Glu Ala Tyr Val Lys Glu Ala Glu Gln
    115             120             125
Gln Ala Cys Ser His Gly Cys Trp Ser Gln Pro Ala Glu Pro Glu Pro
    130             135             140
Glu Gln Lys Arg Lys Val Leu Glu Ala Pro Ser Gly Ala Leu Ser Leu
145             150             155             160
Leu Asp Leu Phe Ser Thr Leu Cys Asn Asp Leu Val Asn Ser Ala Gln
            165             170             175
Gly Phe Val Ser Ser Thr Trp Thr Tyr Tyr Leu Gln Thr Asp Asn Gly
            180             185             190
Lys Val Val Val Phe Gln Thr Gln Pro Ile Val Glu Ser Leu Gly Phe
    195             200             205
Gln Gly Gly Arg Leu Gln Arg Val Glu Val Thr Trp Arg Gly Ser His
    210             215             220
Pro Glu Ala Leu Glu Val His Val Asp Pro Val Gly Pro Leu Asp Lys
225             230             235             240
```

```
Val Arg Lys Ala Lys Ile Arg Val Lys Thr Ser Ser Lys Ala Lys Val
            245                 250                 255
Glu Ser Glu Glu Pro Gln Asp Asn Asp Phe Leu Ser Cys Met Ser Arg
            260                 265                 270
Arg Ser Gly Leu Pro Arg Trp Ile Leu Ala Cys Cys Leu Phe Leu Ser
            275                 280                 285
Val Leu Val Met Leu Trp Leu Ser Cys Ser Thr Leu Val Thr Ala Pro
            290                 295                 300
Gly Gln His Leu Lys Phe Gln Pro Leu Thr Leu Glu Gln His Lys Gly
305                 310                 315                 320
Phe Met Met Glu Pro Asp Trp Pro Leu Tyr Pro Pro Pro Ser His Ala
            325                 330                 335
Cys Glu Asp Ser Leu Pro Pro Tyr Lys Leu Lys Leu Asp Leu Thr Lys
            340                 345                 350
Leu
353
```

```
        <210> 1298
        <211> 161
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1298
Phe Pro Glu Leu Gly Thr Ser Leu Ser Ala Met Arg Phe Leu Ala Ala
  1               5                 10                  15
Thr Phe Leu Leu Leu Ala Leu Ser Thr Ala Ala Gln Ala Glu Pro Val
            20                  25                  30
Gln Phe Lys Asp Cys Gly Ser Val Asp Gly Val Ile Lys Glu Val Asn
            35                  40                  45
Val Ser Pro Cys Pro Thr Gln Pro Cys Gln Leu Ser Lys Gly Gln Ser
    50                  55                  60
Tyr Ser Val Asn Val Thr Phe Thr Ser Asn Ile Gln Ser Lys Ser Ser
65                  70                  75                  80
Lys Ala Val Val His Gly Ile Leu Met Gly Val Pro Val Pro Phe Pro
            85                  90                  95
Ile Pro Glu Pro Asp Gly Cys Lys Ser Gly Ile Asn Cys Pro Ile Gln
            100                 105                 110
Lys Asp Lys Thr Tyr Ser Tyr Leu Asn Lys Leu Pro Val Lys Ser Glu
            115                 120                 125
Tyr Pro Ser Ile Lys Leu Val Val Glu Trp Gln Leu Gln Asp Asp Lys
            130                 135                 140
Asn Gln Ser Leu Phe Cys Trp Glu Ile Pro Val Gln Ile Val Ser His
145                 150                 155                 160
Leu
161
```

```
        <210> 1299
        <211> 128
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1299
Ala Pro Glu Thr Phe Arg Cys Val Trp Arg Leu Gln Gly Leu Thr Phe
  1               5                 10                  15
```

```
Ile Ala Phe Thr Glu Leu Gln Ala Lys Val Ile Asp Thr Gln Gln Lys
         20                      25                      30
Val Lys Leu Ala Asp Ile Gln Ile Glu Gln Leu Asn Arg Thr Lys Lys
     35                      40                      45
His Ala His Leu Thr Asp Thr Glu Ile Met Thr Leu Val Asp Glu Thr
 50                      55                      60
Asn Met Tyr Glu Gly Val Gly Arg Met Phe Ile Leu Gln Ser Lys Glu
 65                  70                  75                      80
Ala Ile His Ser Gln Leu Leu Glu Lys Gln Lys Ile Ala Glu Glu Lys
                 85                  90                      95
Ile Lys Glu Leu Glu Gln Lys Lys Ser Tyr Leu Glu Arg Ser Val Lys
             100                 105                 110
Glu Ala Glu Asp Asn Ile Arg Glu Met Leu Met Ala Arg Arg Ala Gln
             115                 120                 125     128
```

```
<210> 1300
<211> 265
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(265)
<223> X = any amino acid or stop code
```

```
    <400> 1300
His Ser Leu Leu Leu Gly Thr Arg Val Arg Asp Ala Ser Ser Lys Ile
 1               5                   10                  15
Gln Gly Glu Tyr Thr Leu Thr Leu Arg Lys Gly Gly Asn Asn Lys Leu
             20                  25                  30
Ser Arg Val Phe His Arg Asp Gly His Tyr Gly Phe Ser Glu Pro Leu
             35                  40                  45
Thr Phe Cys Ser Val Val Asp Leu Ile Asn His Tyr Arg His Glu Ser
     50                  55                  60
Leu Ala Gln Tyr Asn Ala Lys Leu Asp Thr Arg Leu Leu Tyr Pro Val
 65                  70                  75                      80
Ser Lys Tyr Gln Gln Val Arg Ala Gly Leu Gly Ala Arg Glu Gly Ser
             85                  90                  95
Thr Trp Leu Ala Pro Gly Leu Ser Phe Leu Gly Arg Pro Asp Gln Ala
             100                 105                 110
Met His Leu Pro Ser Phe Arg His Val Ser Pro Asp Gln Ile Val Lys
     115                 120                 125
Glu Asp Ser Val Glu Ala Val Gly Ala Gln Leu Lys Val Tyr His Gln
     130                 135                 140
Gln Tyr Gln Asp Lys Ser Arg Glu Tyr Asp Gln Leu Tyr Glu Glu Tyr
145                 150                 155                 160
Thr Arg Thr Ser Gln Glu Leu Gln Met Lys Arg Thr Ala Ile Glu Ala
             165                 170                 175
Phe Asn Glu Thr Ile Lys Ile Phe Glu Glu Gln Gly Gln Thr Gln Glu
             180                 185                 190
Lys Cys Ser Lys Glu Tyr Leu Glu Arg Phe Arg Arg Glu Gly Asn Gln
     195                 200                 205
Thr Lys Glu Met Gln Arg Ile Leu Leu Asn Ser Glu Arg Leu Lys Ser
     210                 215                 220
Arg Ile Ala Glu Ile His Glu Ser Pro His Arg Ser Trp Glu Gln Gln
225                 230                 235                 240
Leu Leu Val Pro Arg Ala Ser Asp Asn Lys Arg Asp Ile Asp Lys Pro
```

```
                     245                  250                    255
         His Xaa Thr Ser Leu Lys Pro Asp Leu
                      · 260                   265



              <210> 1301
              <211> 490
              <212>Amino acid
              <213> Homo sapiens




              <400> 1301
        Ala Ala Ala Ala Ala Gly Arg Gly Arg Ser Ser Gly Arg Arg Arg Arg
         1               5                  10                  15
        Arg Arg Pro Gly Ala Leu Phe Ala Ser Leu Gly Val Leu Leu Gly Pro
                      20                  25                  30
        Arg Pro Pro Pro Gly Ile Pro Arg Thr Arg Ala Cys Ser Met Gly Gly
                    35                  40                  45
        Val Gly Glu Pro Gly Pro Arg Glu Gly Pro Ala Gln Pro Gly Ala Pro
              50                  55                  60
        Leu Pro Thr Phe Cys Trp Glu Gln Ile Arg Ala His Asp Gln Pro Gly
        65                  70  ·                75                  80
        Asp Lys Trp Leu Val Ile Glu Arg Arg Val Tyr Asp Ile Ser Arg Trp
                      85                  90                  95
        Ala Gln Arg His Pro Gly Gly Ser Arg Leu Ile Gly His His Gly Ala
                      100                 105                 110
        Glu Asp Ala Thr Asp Ala Phe Arg Ala Phe His Gln Asp Leu Asn Phe
                      115                 120                 125
        Val Arg Lys Phe Leu Gln Pro Leu Leu Ile Gly Glu Leu Ala Pro Glu
          · 130                 135                 140
        Glu Pro Ser Gln Asp Gly Pro Leu Asn Ala Gln Leu Val Glu Asp Phe
        145                 .   150                 155                 160
        Arg Ala Leu His Gln Ala Ala Glu Asp Met Lys Leu Phe Asp Ala Ser
                      165                 170                 175
        Pro Thr Phe Phe Ala Phe Leu Leu Gly His Ile Leu Ala Met Glu Val
                      180                 185                 190
        Leu Ala Trp Leu Leu Ile Tyr Leu Leu Gly Pro Gly Trp Val Pro Ser
                      195                 200                 205
        Ala Leu Ala Ala Phe Ile Leu Ala Ile Ser Gln Ala Gln Ser Trp Cys
                      210                 215                   220
        Leu Gln His Asp Leu Gly His Ala Ser Ile Phe Lys Lys Ser Trp Trp
        225                 230                 235                 240
        Asn His Val Ala Gln Lys Phe Val Met Gly Gln Leu Lys Gly Phe Ser
                      245                 250                 255
        Ala His Trp Trp Asn Phe Arg His Phe Gln His His Ala Lys Pro Asn
                      260                 265                 270
        Ile Phe His Lys Asp Pro Asp Val Thr Val Ala Pro Val Phe Leu Leu
                      275                 280                 285
        Gly Glu Ser Ser Val Glu Tyr Gly Lys Lys Lys Arg Arg Tyr Leu Pro
                      290                 295                 300
        Tyr Asn Gln Gln His Leu Tyr Phe Phe Leu Ile Gly Pro Pro Leu Leu
        305                 310                 315                 320
        Thr Leu Val Asn Phe Glu Val Glu Asn Leu Ala Tyr Met Leu Val Cys
                      325                 330                 335
        Met Gln Trp Ala Asp Leu Leu Trp Ala Ala Ser Phe Tyr Ala Arg Phe
                      340                 345                 350
        Phe Leu Ser Tyr Leu Pro Phe Tyr Gly Val Pro Gly Val Leu Leu Phe
                      355                 360                 365
        Phe Val Ala Val Arg Val Leu Glu Ser His Trp Phe Val Trp Ile Thr
         370                 375                 380
        Gln Met Asn His Ile Pro Lys Glu Ile Gly His Glu Lys His Arg Asp
```

```
385                      390                      395                      400
Trp Val Ser Ser Gln Leu Ala Ala Thr Cys Asn Val Glu Pro Ser Leu
                 405                      410                      415
Phe Thr Asn Trp Phe Ser Gly His Leu Asn Phe Gln Ile Glu His His
             420                      425                      430
Leu Phe Pro Arg Met Pro Arg His Asn Tyr Ser Arg Val Ala Pro Leu
             435                      440                      445
Val Lys Ser Leu Cys Ala Lys His Gly Leu Ser Tyr Glu Val Lys Pro
         450                      455                      460
Phe Leu Thr Ala Leu Val Asp Ile Val Arg Ser Leu Lys Lys Ser Gly
465                      470                      475                      480
Asp Ile Trp Leu Asp Ala Tyr Leu His Gln
                 485                      490
```

```
<210> 1302
<211> 110
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1302
Lys Ser Arg Ala Thr Arg Leu Arg Glu Ser Ala Glu Met Thr Gly Phe
1                   5                   10                      15
Leu Leu Pro Pro Ala Ser Arg Gly Thr Arg Arg Ser Cys Ser Arg Ser
             20                      25                      30
Arg Lys Arg Gln Thr Arg Arg Arg Asn Pro Ser Ser Phe Val Ala
         35                      40                      45
Ser Cys Pro Thr Leu Leu Pro Phe Ala Cys Val Pro Gly Ala Ser Pro
     50                      55                      60
Thr Thr Leu Ala Phe Pro Pro Val Val Leu Thr Gly Pro Ser Thr Asp
65                      70                      75                      80
Gly Ile Pro Phe Ala Leu Ser Leu Gln Arg Val Pro Phe Val Leu Pro
                 85                      90                      95
Ser Pro Gln Val Ala Ser Leu Pro Leu Gly His Ser Arg Gly
             100                     105                     110
```

```
<210> 1303
<211> 138
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1303
Ile Gln Tyr Arg Ser Asp Leu Glu Leu His Ser Ile Thr Met Lys Lys
1                   5                   10                      15
Ser Gly Val Leu Phe Leu Leu Gly Ile Ile Leu Leu Val Leu Ile Gly
             20                      25                      30
Val Gln Gly Thr Pro Val Val Arg Lys Gly Arg Cys Ser Cys Ile Ser
         35                      40                      45
Thr Asn Gln Gly Thr Ile His Leu Gln Ser Leu Lys Asp Leu Lys Gln
     50                      55                      60
Phe Ala Pro Ser Pro Ser Cys Glu Lys Ile Glu Ile Ile Ala Thr Leu
65                      70                      75                      80
Lys Asn Gly Val Gln Thr Cys Leu Asn Pro Asp Ser Ala Asp Val Lys
             85                      90                      95
Glu Leu Ile Lys Lys Trp Glu Lys Gln Val Ser Gln Lys Lys Lys Gln
```

```
                 100                    105                    110
      Lys Asn Gly Lys Lys His Gln Lys Lys Lys Val Leu Lys Val Arg Lys
             115                    120                    125
      Ser Gln Arg Ser Arg Gln Lys Lys Thr Thr
             130                    135        138
```

```
      <210> 1304
      <211> 1000
      <212>Amino acid
      <213> Homo sapiens
```

```
      <400> 1304
Ile Pro Gly Ser Thr Ile Ser Cys Arg Gly Cys Cys Gly Lys Trp Pro
  1                   5                    10                    15
Val Gln Glu Ala Asp Pro Pro Arg Ala Ala Leu Arg Gly Arg Phe Pro
                 20                    25                    30
Ala Leu Leu Thr Arg His Cys Pro Ser Pro Arg Ala Glu Lys Glu Lys
             35                    40                    45
Arg Ser Leu Arg Arg Cys Gly Cys Arg Pro Leu Leu Val Glu Leu Ala
      50                    55                    60
Gly Pro Ala Gly Gln Ala Val Glu Val Leu Pro His Phe Glu Ser Leu
 65                    70                    75                    80
Gly Lys Gln Glu Lys Ile Pro Asn Lys Met Ser Ala Phe Arg Asn His
                 85                    90                    95
Cys Pro His Leu Asp Ser Val Gly Glu Ile Thr Lys Glu Asp Leu Ile
             100                   105                   110
Gln Lys Ser Leu Gly Thr Cys Gln Asp Cys Lys Val Gln Gly Pro Asn
             115                   120                   125
Leu Trp Ala Cys Leu Glu Asn Arg Cys Ser Tyr Val Gly Cys Gly Glu
             130                   135                   140
Ser Gln Val Asp His Ser Thr Ile His Ser Gln Glu Thr Lys His Tyr
145                   150                   155                   160
Leu Thr Val Asn Leu Thr Thr Leu Arg Val Trp Cys Tyr Ala Cys Ser
                 165                   170                   175
Lys Glu Val Phe Leu Asp Arg Lys Leu Gly Thr Gln Pro Ser Leu Pro
             180                   185                   190
His Val Arg Gln Pro His Gln Ile Gln Glu Asn Ser Val Gln Asp Phe
             195                   200                   205
Lys Ile Pro Ser Asn Thr Thr Leu Lys Thr Pro Leu Val Ala Val Phe
      210                   215                   220
Asp Asp Leu Asp Ile Glu Ala Asp Glu Glu Asp Glu Leu Arg Ala Arg
225                   230                   235                   240
Gly Leu Thr Gly Leu Lys Asn Ile Gly Asn Thr Cys Tyr Met Asn Ala
                 245                   250                   255
Ala Leu Gln Ala Leu Ser Asn Cys Pro Pro Leu Thr Gln Phe Phe Leu
             260                   265                   270
Asp Cys Gly Gly Leu Ala Arg Thr Asp Lys Lys Pro Ala Ile Cys Lys
             275                   280                   285
Ser Tyr Leu Lys Leu Met Thr Glu Leu Trp Tyr Lys Ser Arg Pro Gly
      290                   295                   300
Ser Val Val Pro Thr Thr Leu Phe Gln Gly Ile Lys Thr Val Asn Pro
305                   310                   315                   320
Thr Phe Arg Gly Tyr Ser Gln Gln Asp Ala Gln Glu Phe Leu Arg Cys
                 325                   330                   335
Leu Met Asp Leu Leu His Glu Glu Leu Lys Glu Gln Val Met Glu Val
             340                   345                   350
Glu Glu Asp Pro Gln Thr Ile Thr Thr Glu Glu Thr Met Glu Glu Asp
             355                   360                   365
Lys Ser Gln Ser Asp Val Asp Phe Gln Ser Cys Glu Ser Cys Ser Asn
```

```
            370                      375                    380
Ser Asp Arg Ala Glu Asn Glu Asn Gly Ser Arg Cys Phe Ser Glu Asp
385                      390                    395                  400
Asn Asn Glu Thr Thr Met Leu Ile Gln Asp Asp Glu Asn Asn Ser Glu
                    405                    410                  415
Met Ser Lys Asp Trp Gln Lys Glu Lys Met Cys Asn Lys Ile Asn Lys
                420                    425                  430
Val Asn Ser Glu Gly Glu Phe Asp Lys Asp Arg Asp Ser Ile Ser Glu
            435                    440                  445
Thr Val Asp Leu Asn Asn Gln Glu Thr Val Lys Val Gln Ile His Ser
        450                    455                  460
Arg Ala Ser Glu Tyr Ile Thr Asp Val His Ser Asn Asp Leu Ser Thr
465                    470                    475                  480
Pro Gln Ile Leu Pro Ser Asn Glu Gly Val Asn Pro Arg Leu Ser Ala
                485                    490                  495
Ser Pro Pro Lys Ser Gly Asn Leu Trp Pro Gly Leu Ala Pro Pro His
            500                    505                  510
Lys Lys Ala Gln Ser Ala Ser Pro Lys Arg Lys Lys Gln His Lys Lys
        515                    520                  525
Tyr Arg Ser Val Ile Ser Asp Ile Phe Asp Gly Thr Ile Ile Ser Ser
    530                    535                  540
Val Gln Cys Leu Thr Cys Asp Arg Val Ser Val Thr Leu Glu Thr Phe
545                    550                    555                  560
Gln Asp Leu Ser Leu Pro Ile Pro Gly Lys Glu Asp Leu Ala Lys Leu
                565                    570                  575
His Ser Ser Ser His Pro Thr Ser Ile Val Lys Ala Gly Ser Cys Gly
            580                    585                  590
Glu Ala Tyr Ala Pro Gln Gly Trp Ile Ala Phe Phe Met Glu Tyr Val
        595                    600                  605
Lys Arg Phe Val Val Ser Cys Val Pro Ser Trp Phe Trp Gly Pro Val
    610                    615                  620
Val Thr Leu Gln Asp Cys Leu Ala Ala Phe Phe Ala Arg Asp Glu Leu
625                    630                    635                  640
Lys Gly Asp Asn Met Tyr Ser Cys Glu Lys Cys Lys Lys Leu Arg Asn
                645                    650                  655
Gly Val Lys Phe Cys Lys Val Gln Asn Phe Pro Glu Ile Leu Cys Ile
            660                    665                  670
His Leu Lys Arg Phe Arg His Glu Leu Met Phe Ser Thr Lys Ile Ser
        675                    680                  685
Thr His Val Ser Phe Pro Leu Glu Gly Leu Asp Leu Gln Pro Phe Leu
    690                    695                  700
Ala Lys Asp Ser Pro Ala Gln Ile Val Thr Tyr Asp Leu Leu Ser Val
705                    710                    715                  720
Ile Cys His His Gly Thr Ala Ser Ser Gly His Tyr Ile Ala Tyr Cys
            725                    730                  735
Arg Asn Asn Leu Asn Asn Leu Trp Tyr Glu Phe Asp Asp Gln Ser Val
        740                    745                  750
Thr Glu Val Ser Glu Ser Thr Val Gln Asn Ala Glu Ala Tyr Val Leu
    755                    760                  765
Phe Tyr Arg Lys Ser Ser Glu Glu Ala Gln Lys Glu Arg Arg Arg Ile
    770                    775                  780
Ser Asn Leu Leu Asn Ile Met Glu Pro Ser Leu Leu Gln Phe Tyr Ile
785                    790                    795                  800
Ser Arg Gln Trp Leu Asn Lys Phe Lys Thr Phe Ala Glu Pro Gly Pro
                805                    810                  815
Ile Ser Asn Asn Asp Phe Leu Cys Ile His Gly Gly Val Pro Pro Arg
            820                    825                  830
Lys Ala Gly Tyr Ile Glu Asp Leu Val Leu Met Leu Pro Gln Asn Ile
        835                    840                  845
Trp Asp Asn Leu Tyr Ser Arg Tyr Gly Gly Gly Pro Ala Val Asn His
        850                    855                  860
Leu Tyr Ile Cys His Thr Cys Gln Ile Glu Ala Glu Lys Ile Glu Lys
865                    870                    875                  880
Arg Arg Lys Thr Glu Leu Glu Ile Phe Ile Arg Leu Asn Arg Ala Phe
```

```
                       885                    890                     895
Gln Lys Glu Asp Ser Pro Ala Thr Phe Tyr Cys Ile Ser Met Gln Trp
              900                    905                     910
Phe Arg Glu Trp Glu Ser Phe Val Lys Gly Lys Asp Gly Asp Pro Pro
              915                    920                     925
Gly Pro Ile Asp Asn Thr Lys Ile Ala Val Thr Lys Cys Gly Asn Val
         930                    935                     940
Met Leu Arg Gln Gly Ala Asp Ser Gly Gln Ile Ser Glu Glu Thr Trp
945                    950                    955                     960
Asn Phe Leu Gln Ser Ile Tyr Gly Gly Gly Pro Glu Val Ile Leu Arg
              965                    970                     975
Pro Pro Val Val His Val Asp Pro Asp Ile Leu Gln Ala Glu Glu Lys
         980                    985                     990
Ile Glu Val Glu Thr Arg Ser Leu
         995                   1000
```

```
        <210> 1305
        <211> 141
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1305
Ser Pro Ser Ala Ala Gly Gly Leu Ala Trp Val Ser Leu Ala Leu Gly
 1              5                    10                     15
Ser Gly Ser Arg Gly Arg Asp His Ser Gly Ser Gly Val Gly Thr Ala
              20                    25                     30
Met Ala Gly Ala Leu Val Arg Lys Ala Ala Asp Tyr Val Arg Ser Lys
         35                    40                     45
Asp Phe Arg Asp Tyr Leu Met Ser Thr His Phe Trp Gly Pro Val Ala
    50                    55                     60
Asn Trp Gly Leu Pro Ile Ala Ala Ile Asn Asp Met Lys Lys Ser Pro
65                    70                    75                     80
Glu Ile Ile Ser Gly Arg Met Thr Phe Ala Leu Cys Cys Tyr Ser Leu
                 85                    90                     95
Thr Phe Met Arg Phe Ala Tyr Lys Val Gln Pro Arg Asn Trp Leu Leu
              100                    105                     110
Phe Ala Cys His Ala Thr Asn Glu Val Ala Gln Leu Ile Gln Gly Gly
         115                    120                     125
Arg Leu Ile Lys His Glu Met Thr Lys Thr Ala Ser Ala
         130                    135                     140 141
```

```
        <210> 1306
        <211> 386
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1306
Leu Gly Ser Arg Gln Ala Ala Gly Thr Met Arg Gly Gln Arg Ser Leu
 1              5                    10                     15
Leu Leu Gly Pro Ala Arg Leu Cys Leu Arg Leu Leu Leu Leu Leu Gly
              20                    25                     30
Tyr Arg Arg Arg Cys Pro Pro Leu Leu Arg Gly Leu Val Gln Arg Trp
         35                    40                     45
Arg Tyr Gly Lys Val Cys Leu Arg Ser Leu Leu Tyr Asn Ser Phe Gly
```

```
        50                    55                    60
Gly Ser Asp Thr Ala Val Asp Ala Ala Phe Glu Pro Val Tyr Trp Leu
65                  70                    75                    80
Val Asp Asn Val Ile Arg Trp Phe Gly Val Val Phe Val Val Leu Val
                    85                    90                    95
Ile Val Leu Thr Gly Ser Ile Val Ala Ile Ala Tyr Leu Cys Val Leu
                   100                   105                   110
Pro Leu Ile Leu Arg Thr Tyr Ser Val Pro Arg Leu Cys Trp His Phe
                   115                   120                   125
Phe Tyr Ser His Trp Asn Leu Ile Leu Ile Val Phe His Tyr Tyr Gln
                   130                   135                   140
Ala Ile Thr Thr Pro Pro Gly Tyr Pro Pro Gln Gly Arg Asn Asp Ile
145                 150                   155                   160
Ala Thr Val Ser Ile Cys Lys Lys Cys Ile Tyr Pro Lys Pro Ala Arg
                   165                   170                   175
Thr His His Cys Ser Ile Cys Asn Arg Cys Val Leu Lys Met Asp His
                   180                   185                   190
His Cys Pro Trp Leu Asn Asn Cys Val Gly His Tyr Asn His Arg Tyr
                   195                   200                   205
Phe Phe Ser Phe Cys Phe Phe Met Thr Leu Gly Cys Val Tyr Cys Ser
                   210                   215                   220
Tyr Gly Ser Trp Asp Leu Phe Arg Glu Ala Tyr Ala Ala Ile Glu Lys
225                 230                   235                   240
Met Lys Gln Leu Asp Lys Asn Lys Leu Gln Ala Val Ala Asn Gln Thr
                   245                   250                   255
Tyr His Gln Thr Pro Pro Pro Thr Phe Ser Phe Arg Glu Arg Met Thr
                   260                   265                   270
His Lys Ser Leu Val Tyr Leu Trp Phe Leu Cys Ser Ser Val Ala Leu
                   275                   280                   285
Ala Leu Gly Ala Leu Thr Val Trp His Ala Val Leu Ile Ser Arg Gly
                   290                   295                   300
Glu Thr Ser Ile Glu Arg His Ile Asn Lys Lys Glu Arg Arg Arg Leu
305                 310                   315                   320
Gln Ala Lys Gly Arg Val Phe Arg Asn Pro Tyr Asn Tyr Gly Cys Leu
                   325                   330                   335
Asp Asn Trp Lys Val Phe Leu Gly Val Asp Thr Gly Arg His Trp Leu
                   340                   345                   350
Thr Arg Val Leu Leu Pro Ser Ser His Leu Pro His Gly Asn Gly Met
                   355                   360                   365
Ser Trp Glu Pro Pro Pro Trp Val Thr Ala His Ser Ala Ser Val Met
                   370                   375                   380
Ala Val
385 386
```

```
        <210> 1307
        <211> 298
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 1307
Ala Thr Arg Arg Arg Ala Ala Glu Ala Gly Met Ala Ala Val Leu Gln
1                   5                    10                    15
Arg Val Glu Arg Leu Ser Asn Arg Val Val Arg Val Leu Gly Cys Asn
                    20                    25                    30
Pro Gly Pro Met Thr Leu Gln Gly Thr Asn Thr Tyr Leu Val Gly Thr
                    35                    40                    45
Gly Pro Arg Arg Ile Leu Ile Asp Thr Gly Glu Pro Ala Ile Pro Glu
        50                    55                    60
Tyr Ile Ser Cys Leu Lys Gln Ala Leu Thr Glu Phe Asn Thr Ala Ile
```

```
      65                    70                    75                    80
Gln Glu Ile Val Val Thr His Trp His Arg Asp His Ser Gly Gly Ile
                     85                    90                    95
Gly Asp Ile Cys Lys Ser Ile Asn Asn Asp Thr Thr Tyr Cys Ile Lys
                100                   105                   110
Lys Leu Pro Arg Asn Pro Gln Arg Glu Glu Ile Ile Gly Asn Gly Glu
                115                   120                   125
Gln Gln Tyr Val Tyr Leu Lys Asp Gly Asp Val Ile Lys Thr Glu Gly
           130                   135                   140
Ala Thr Leu Arg Val Leu Tyr Thr Pro Gly His Thr Asp Asp His Met
145                   150                   155                   160
Ala Leu Leu Leu Glu Glu Glu Asn Ala Ile Phe Ser Gly Asp Cys Ile
                165                   170                   175
Leu Gly Glu Gly Thr Thr Val Phe Glu Asp Leu Tyr Asp Tyr Met Asn
                180                   185                   190
Ser Leu Lys Glu Leu Leu Lys Ile Lys Ala Asp Ile Ile Tyr Pro Gly
           195                   200                   205
His Gly Pro Val Ile His Asn Ala Glu Ala Lys Ile Gln Gln Tyr Ile
     210                   215                   220
Ser His Arg Asn Ile Arg Glu Gln Gln Ile Leu Thr Leu Phe Arg Glu
225                   230                   235                   240
Asn Phe Glu Lys Ser Phe Thr Val Met Glu Leu Val Lys Ile Ile Tyr
                245                   250                   255
Lys Asn Thr Pro Glu Asn Leu His Glu Met Ala Lys His Asn Leu Leu
                260                   265                   270
Leu His Leu Lys Lys Leu Glu Lys Glu Gly Lys Ile Phe Ser Asn Thr
           275                   280                   285
Asp Pro Asp Lys Lys Trp Lys Ala His Leu
     290                   295                   298
```

```
     <210> 1308
     <211> 306
     <212> Amino acid
     <213> Homo sapiens
```

```
     <400> 1308
Glu Leu His Arg Ala Gly Gln Val Ala Gly Gly Ala Arg Arg Ser Arg
  1                 5                    10                   15
Arg Glu Ser Met Glu Leu Glu Arg Ile Val Ser Ala Ala Leu Leu Ala
                20                    25                   30
Phe Val Gln Thr His Leu Pro Glu Ala Asp Leu Ser Gly Leu Asp Glu
           35                    40                   45
Val Ile Phe Ser Tyr Val Leu Gly Val Leu Glu Asp Leu Gly Pro Ser
     50                    55                   60
Gly Pro Ser Glu Glu Asn Phe Asp Met Glu Ala Phe Thr Glu Met Met
65                    70                   75                   80
Glu Ala Tyr Val Pro Gly Phe Ala His Ile Pro Arg Gly Thr Ile Gly
                85                    90                   95
Asp Met Met Gln Lys Leu Ser Gly Gln Leu Ser Asp Ala Arg Asn Lys
                100                   105                  110
Glu Asn Leu Gln Pro Gln Ser Ser Gly Val Gln Gly Gln Val Pro Ile
           115                   120                  125
Ser Pro Glu Pro Leu Gln Arg Pro Glu Met Leu Lys Glu Glu Thr Arg
     130                   135                  140
Ser Ser Ala Ala Ala Ala Ala Asp Thr Gln Asp Glu Ala Thr Gly Ala
145                   150                   155                  160
Glu Glu Glu Leu Leu Pro Gly Val Asp Val Leu Leu Glu Val Phe Pro
                165                   170                  175
Thr Cys Ser Val Glu Gln Ala Gln Trp Val Leu Ala Lys Ala Arg Gly
```

810

```
                    180                     185                     190
Asp Leu Glu Glu Ala Val Gln Met Leu Val Glu Gly Lys Glu Glu Gly
        195                     200                     205
Pro Ala Ala Trp Glu Gly Pro Asn Gln Asp Leu Pro Arg Arg Leu Arg
    210                     215                     220
Gly Pro Gln Lys Asp Glu Leu Lys Ser Phe Ile Leu Gln Lys Tyr Met
225                     230                     235                     240
Met Val Asp Ser Ala Glu Asp Gln Lys Ile His Arg Pro Met Ala Pro
                245                     250                     255
Lys Glu Ala Pro Lys Lys Leu Ile Arg Tyr Ile Asp Asn Gln Val Val
            260                     265                     270
Ser Thr Lys Gly Glu Arg Phe Lys Asp Val Arg Asn Pro Glu Ala Glu
        275                     280                     285
Glu Met Lys Ala Thr Tyr Ile Asn Leu Lys Pro Ala Arg Lys Tyr Arg
    290                     295                     300
Phe His
305 306
```

```
        <210> 1309
        <211> 174
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1309
Phe Ile Thr Gly Lys Gly Ile Val Ala Ile Leu Arg Cys Leu Gln Phe
 1               5                   10                      15
Asn Glu Thr Leu Thr Glu Leu Arg Phe His Asn Gln Arg His Met Leu
            20                      25                      30
Gly His His Ala Glu Met Glu Ile Ala Arg Leu Leu Lys Ala Asn Asn
        35                      40                      45
Thr Leu Leu Lys Met Gly Tyr His Phe Glu Leu Pro Gly Pro Arg Met
    50                      55                      60
Val Val Thr Asn Leu Leu Thr Arg Asn Gln Asp Lys Gln Arg Gln Lys
65                      70                      75                      80
Arg Gln Glu Glu Gln Lys Gln Gln Gln Leu Lys Glu Gln Lys Lys Leu
                85                      90                      95
Ile Ala Met Leu Glu Asn Gly Leu Gly Leu Pro Pro Gly Met Trp Glu
            100                     105                     110
Leu Leu Gly Gly Pro Lys Pro Asp Ser Arg Met Gln Glu Phe Phe Gln
        115                     120                     125
Pro Pro Pro Pro Arg Pro Pro Asn Pro Gln Asn Val Pro Phe Ser Gln
    130                     135                     140
Arg Ser Glu Met Met Lys Lys Pro Ser Gln Ala Pro Lys Tyr Arg Thr
145                     150                     155                     160
Asp Pro Asp Ser Phe Arg Val Val Lys Leu Lys Arg Ile Gln
                165                     170                     174
```

```
        <210> 1310
        <211> 616
        <212>Amino acid
        <213> Homo sapiens
```

```
        <220>
        <221> misc_feature
        <222> (1)...(616)
        <223> X = any amino acid or stop code
```

```
<400> 1310
Gly Gly Arg Ala Gly Thr Gln Cys Cys Trp Arg Ala Gly Ala Arg Leu
1               5                   10                  15
Arg Gly Ile Ser Pro Ser Pro Ala Leu Pro Glu Ala Pro Gly Leu Cys
            20              25                  30
Arg Val Arg Ala Gly Leu Gly Ala Gly Ala Leu Gly Arg Ser Pro Ala
            35              40                  45
Gly Arg Arg Arg Arg Gly Pro Arg Val Ser Ser Ser Pro Ala Pro His
    50                  55                  60
Pro Arg Arg Val Leu Cys Arg Cys Leu Leu Phe Leu Phe Phe Ser Cys
65                  70                  75                  80
His Asp Arg Arg Gly Asp Ser Gln Pro Tyr Gln Ala Leu Lys Tyr Ser
                85                  90                  95
Ser Lys Ser His Pro Ser Ser Gly Asp His Arg His Glu Lys Met Arg
            100                 105                 110
Asp Ala Gly Asp Pro Ser Pro Pro Asn Lys Met Leu Arg Arg Ser Asp
        115                 120                 125
Ser Pro Glu Asn Lys Tyr Ser Asp Ser Thr Gly His Ser Lys Ala Lys
    130                 135                 140
Asn Val His Thr His Arg Val Arg Glu Arg Asp Gly Gly Thr Ser Tyr
145                 150                 155                 160
Ser Pro Gln Glu Asn Ser His Asn His Ser Ala Leu His Ser Ser Asn
                165                 170                 175
Phe Thr Phe Phe Leu Ile Pro Ser Asn Xaa Pro Gln Gly Lys Thr Phe
            180                 185                 190
Arg Ile Ala Pro Tyr Asp Ser Ala Asp Asp Trp Ser Leu Glu His Ile
        195                 200                 205
Ser Ser Ser Gly Glu Lys Tyr Tyr Tyr Asn Cys Arg Thr Glu Val Ser
    210                 215                 220
Gln Trp Gly Lys Thr Pro Lys Ser Gly Leu Glu Arg Gly Gln Arg Gln
225                 230                 235                 240
Lys Glu Ala Asn Lys Met Ala Val Asn Ser Phe Pro Lys Asp Arg Asp
                245                 250                 255
Tyr Arg Arg Glu Val Met Gln Ala Thr Ala Thr Ser Gly Phe Ala Ser
            260                 265                 270
Gly Lys Ser Thr Ser Gly Asp Lys Pro Val Ser His Ser Cys Thr Thr
        275                 280                 285
Pro Ser Thr Ser Ser Ala Ser Gly Leu Asn Pro Thr Ser Ala Pro Pro
    290                 295                 300
Thr Ser Ala Ser Ala Val Pro Val Ser Pro Val Pro Gln Ser Pro Ile
305                 310                 315                 320
Pro Pro Leu Leu Gln Asp Pro Asn Leu Leu Arg Gln Leu Leu Pro Ala
                325                 330                 335
Leu Glu Ala Thr Leu Gln Leu Asn Asn Ser Asn Val Asp Ile Ser Ile
            340                 345                 350
Ile Asn Glu Val Leu Thr Gly Asp Val Thr Gln Ala Ser Leu Gln Thr
        355                 360                 365
Ile Ile His Lys Cys Leu Thr Ala Gly Pro Ser Val Phe Lys Ile Thr
    370                 375                 380
Ser Leu Ile Ser Gln Ala Ala Gln Leu Ser Thr Gln Ala Gln Ala Ser
385                 390                 395                 400
Asn Gln Ser Pro Met Ser Leu Thr Ser Asp Ala Ser Ser Pro Arg Ser
                405                 410                 415
Tyr Val Ser Pro Arg Asn Lys Ala His Leu Lys Leu Asn Thr Val Pro
            420                 425                 430
Ile Gln Thr Phe Gly Phe Ser Thr Pro Pro Val Ser Ser Gln Pro Lys
        435                 440                 445
Val Ser Thr Pro Val Val Lys Gln Gly Pro Val Ser Gln Ser Ala Thr
    450                 455                 460
Gln Gln Pro Val Thr Ala Asp Lys Gln Gln Gly His Glu Pro Val Ser
465                 470                 475                 480
```

```
Pro Arg Ser Leu Gln Arg Ser Ser Ser Gln Arg Ser Pro Ser Pro Gly
                485             ·             490             495
Pro Asn His Thr Ser Asn Ser Ser Asn Ala Ser Asn Ala Thr Val Val
            500                 505                 510
Pro Gln Asn Ser Ser Ala Arg Ser Thr Cys Ser Leu Thr Pro Ala Leu
            515                 520                 525
Ala Ala His Phe Ser Glu Asn Leu Ile Lys His Val Gln Gly Trp Pro
        530             535                 540
Ala Asp His Ala Glu Lys Gln Ala Ser Arg Leu Arg Glu Glu Ala His
545                 550                 555                 560
Asn Met Gly Thr Ile His Met Ser Glu Ile Cys Thr Glu Leu Lys Asn
                565                 570                 575
Leu Arg Ser Leu Val Arg Val Cys Glu Ile Gln Ala Thr Leu Arg Glu
            580                 585                 590
Gln Arg Ile Leu Phe Leu Arg Gln Gln Ile Lys Glu Leu Glu Lys Leu
            595                 600                 605
Lys Asn Gln Asn Ser Phe Met Val
610                 615 616
```

```
<210> 1311
<211> 387
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1311
Val Ala Pro Glu Cys Arg Gly Ala Tyr Pro Phe Arg Ala Met Met Pro
· 1             5                 10                  15
Gly Thr Ala Leu Lys Ala Val Leu Leu Ala Val Leu Leu Val Gly Leu
                20                  25                  30
Gln Thr Ala Thr Gly Arg Leu Leu Ser Gly Gln Pro Val Cys Arg Gly
            35                  40                  45
Gly Thr Gln Arg Pro Cys Tyr Lys Val Ile Tyr Phe His Asp Thr Ser
        50                  55                  60
Arg Arg Leu Asn Phe Glu Glu Ala Lys Glu Ala Cys Arg Arg Asp Gly
65                  70                  75                  80
Gly Gln Leu Val Ser Ile Glu Ser Glu Asp Glu Gln Lys Leu Ile Glu
                85                  90                  95
Lys Phe Ile Glu Asn Leu Leu Pro Ser Asp Gly Asp Phe Trp Ile Gly
            100                 105                 110
Leu Arg Arg Arg Glu Glu Lys Gln Ser Asn Ser Thr Ala Cys Gln Asp
        115                 120                 125
Leu Tyr Ala Trp Thr Asp Gly Ser Ile Ser Gln Phe Arg Asn Trp Tyr
    130                 135                 140
Val Asp Glu Pro Ser Cys Gly Ser Glu Val Cys Val Val Met Tyr His
145                 150                 155                 160
Gln Pro Ser Ala Pro Ala Gly Ile Gly Gly Pro Tyr Met Phe Gln Trp
                165                 170                 175
Asn Asp Asp Arg Cys Asn Met Lys Asn Asn Phe Ile Cys Lys Tyr Ser
            180                 185                 190
Asp Glu Lys Pro Ala Val Pro Ser Arg Glu Ala Glu Gly Glu Glu Thr
        195                 200                 205
Glu Leu Thr Thr Pro Val Leu Pro Glu Glu Thr Gln Glu Glu Asp Ala
    210                 215                 220
Lys Lys Thr Phe Lys Glu Ser Arg Glu Ala Ala Leu Asn Leu Ala Tyr
225                 230                 235                 · 240
Ile Leu Ile Pro Ser Ile Pro Leu Leu Leu Leu Leu Val Val Thr Thr
                245                 250                 255
Val Val Cys Trp Val Trp Ile Cys Arg Lys Arg Lys Arg Glu Gln Pro
            260                 265                 270
```

```
Asp Pro Ser Thr Lys Lys Gln His Thr Ile Trp Pro Ser Pro His Gln
    275                 280                 285
Gly Asn Ser Pro Asp Leu Glu Val Tyr Asn Val Ile Arg Lys Gln Ser
    290                 295                 300
Glu Ala Asp Leu Ala Glu Thr Arg Pro Asp Leu Lys Asn Ile Ser Phe
305                 310                 315                 320
Arg Val Cys Ser Gly Glu Ala Thr Pro Asp Asp Met Ser Cys Asp Tyr
            325                 330                 335
Asp Asn Met Ala Val Asn Pro Ser Glu Ser Gly Phe Val Thr Leu Val
        340                 345                 350
Ser Val Glu Ser Gly Phe Val Thr Asn Asp Ile Tyr Glu Phe Ser Pro
    355                 360                 365
Asp Gln Met Gly Arg Ser Lys Glu Ser Gly Trp Val Glu Asn Glu Ile
370                 375                 380
Tyr Gly Tyr
385     387
```

```
<210> 1312
<211> 470
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1312
Thr Glu Trp Gly Leu Ser Gly Ser Cys Pro Gly Cys Ser Pro Leu Glu
1               5                   10                  15
Pro Gly Ser Arg Gly Arg Gly Ala Ala Ala Trp Arg Ile Leu Arg Cys
            20                  25                  30
Arg Arg Leu Pro Glu Pro Ser Pro Phe Leu Thr Gln Pro Asn Leu Ala
        35                  40                  45
Gln Ser Gln Pro Pro Ala Pro Val Pro Val Thr Asp Pro Ser Val Thr
    50                  55                  60
Met His Pro Ala Val Phe Leu Ser Leu Pro Asp Leu Arg Cys Ser Leu
65                  70                  75                  80
Leu Leu Leu Val Thr Trp Val Phe Thr Pro Val Thr Thr Glu Ile Thr
            85                  90                  95
Ser Leu Asp Thr Glu Asn Ile Asp Glu Ile Leu Asn Asn Ala Asp Val
        100                 105                 110
Ala Leu Val Asn Phe Tyr Ala Asp Trp Cys Arg Phe Ser Gln Met Leu
    115                 120                 125
His Pro Ile Phe Glu Glu Ala Ser Asp Val Ile Lys Glu Glu Phe Pro
    130                 135                 140
Asn Glu Asn Gln Val Val Phe Ala Arg Val Asp Cys Asp Gln His Ser
145                 150                 155                 160
Asp Ile Ala Gln Arg Tyr Arg Ile Ser Lys Tyr Pro Thr Leu Lys Leu
            165                 170                 175
Phe Arg Asn Gly Met Met Met Lys Arg Glu Tyr Arg Gly Gln Arg Ser
        180                 185                 190
Val Lys Ala Leu Ala Asp Tyr Ile Arg Gln Gln Lys Ser Asp Pro Ile
    195                 200                 205
Gln Glu Ile Arg Asp Leu Ala Glu Ile Thr Thr Leu Asp Arg Ser Lys
    210                 215                 220
Arg Asn Ile Ile Gly Tyr Phe Glu Gln Lys Asp Ser Asp Asn Tyr Arg
225                 230                 235                 240
Val Phe Glu Arg Val Ala Asn Ile Leu His Asp Asp Cys Ala Phe Leu
            245                 250                 255
Ser Ala Phe Gly Asp Val Ser Lys Pro Glu Arg Tyr Ser Gly Asp Asn
            260                 265                 270
Ile Ile Tyr Lys Pro Pro Gly His Ser Ala Pro Asp Met Val Tyr Leu
    275                 280                 285
```

814

```
Gly Ala Met Thr Asn Phe Asp Val Thr Tyr Asn Trp Ile Gln Asp Lys
290                     295                 300
Cys Val Pro Leu Val Arg Glu Ile Thr Phe Glu Asn Gly Glu Glu Leu
305                     310                 315                 320
Thr Glu Glu Gly Leu Pro Phe Leu Ile Leu Phe His Met Lys Glu Asp
                325                 330                 335
Thr Glu Ser Leu Glu Ile Phe Gln Asn Glu Val Ala Arg Gln Leu Ile
                340                 345                 350
Ser Glu Lys Gly Thr Ile Asn Phe Leu His Ala Asp Cys Asp Lys Phe
                355                 360                 365
Arg His Pro Leu Leu His Ile Gln Lys Thr Pro Ala Asp Cys Pro Val
370                     375                 380
Ile Ala Ile Asp Ser Phe Arg His Met Tyr Val Phe Gly Asp Phe Lys
385                     390                 395                 400
Asp Val Leu Ile Pro Gly Lys Leu Lys Gln Phe Val Phe Asp Leu His
                405                 410                 415
Ser Gly Lys Leu His Arg Glu Phe His His Gly Pro Asp Pro Thr Asp
                420                 425                 430
Thr Ala Pro Gly Glu Gln Ala Gln Asp Val Ala Ser Ser Pro Pro Glu
                435                 440                 445
Ser Ser Phe Gln Lys Leu Ala Pro Ser Glu Tyr Arg Tyr Thr Leu Leu
450                     455                 460
Arg Asp Arg Asp Glu Leu
465                 470


        <210> 1313
        <211> 262
        <212> Amino acid
        <213> Homo sapiens




        <400> 1313
Leu Thr Pro Ser Val Gly Pro Val Phe Pro Gly Arg Pro Thr Arg Pro
    1               5                   10                  15
Leu Ala Ser Pro Phe Pro Val Pro Leu His Arg Cys Ser Ala Gly Ser
                20                  25                  30
Gln Pro Pro Gly Pro Val Pro Glu Gly Leu Ile Arg Ile Tyr Ser Met
        35                  40                  45
Arg Phe Cys Pro Tyr Ser His Arg Thr Arg Leu Val Leu Lys Ala Lys
    50                  55                  60
Asp Ile Arg His Glu Val Asn Ile Asn Leu Arg Asn Lys Pro Glu
65                  70                  75                  80
Trp Tyr Tyr Thr Lys His Pro Phe Gly His Ile Pro Val Leu Glu Thr
                85                  90                  95
Ser Gln Cys Gln Leu Ile Tyr Glu Ser Val Ile Ala Cys Glu Tyr Leu
                100                 105                 110
Asp Asp Ala Tyr Pro Gly Arg Lys Leu Phe Pro Tyr Asp Pro Tyr Glu
        115                 120                 125
Arg Ala Arg Gln Lys Met Leu Leu Glu Leu Phe Cys Lys Val Pro His
        130                 135                 140
Leu Thr Lys Glu Cys Leu Val Ala Leu Arg Cys Gly Arg Glu Cys Thr
145                 150                 155                 160
Asn Leu Lys Ala Ala Leu Arg Gln Glu Phe Ser Asn Leu Glu Glu Ile
                165                 170                 175
Leu Glu Tyr Gln Asn Thr Thr Phe Phe Gly Gly Thr Cys Ile Ser Met
                180                 185                 190
Ile Asp Tyr Leu Leu Trp Pro Trp Phe Glu Arg Leu Asp Val Tyr Gly
        195                 200                 205
Ile Leu Asp Cys Val Ser His Thr Pro Ala Leu Arg Leu Trp Ile Ser
        210                 215                 220
```

Ala ·Met Lys Trp Asp Pro Thr Val Cys Ala ·Leu Leu Met Asp Lys Ser
225   230   235   . 240
Ile Phe Gln Gly Phe Leu Asn Leu Tyr Phe Gln Asn Asn Pro Asn Ala
            245   250   255
Phe Asp Phe Gly Leu Cys
            260   262

        <210> 1314
        <211> 173
        <212>Amino acid
        <213> Homo sapiens

        <400> 1314
Asn Thr Ala Thr Asn Met Thr Gln Pro Asn Ala Gly Thr Arg Lys Tyr
 1   5   10   15
Ser Val Pro Ala Ile Ser Val His Thr Ser Ser Ser Ser Phe Ala Tyr
            20   25   30
Asp Arg Glu Phe Leu Arg Thr Leu Pro Gly Phe Leu Ile Val Ala Glu
            35   40   45
Ile Val Leu Gly Leu Leu Val Trp Thr Leu Ile Ala Gly Thr Glu Tyr
    50   55   ·60
Phe Arg Val Pro Ala Phe Gly Trp Val Met Phe Val Ala Val Phe Tyr
65   .70·   75   80
Trp Val Leu Thr Val Phe Phe Leu Ile Ile Tyr Ile Thr Met Thr Tyr
            85   90   95
Thr Arg Ile Pro Gln Val Pro Trp Thr Thr Val Gly Leu Cys Phe Asn
            100   105   110
Gly Ser Ala Phe Val Leu Tyr Leu Ser Ala Ala Val Val Asp Ala Ser
    115   120   125
Ser Val Ser Pro Glu Arg Asp Ser His Asn Phe Asn Ser Trp Ala Ala
    130   135   140
Ser Ser Phe Phe Ala Phe Leu Val Thr Ile Cys Tyr Ala Gly Asn Thr
145   150   155   160
Tyr Phe Ser Phe Ile Ala Trp Arg Ser Arg Thr Ile Gln
            165   170   173

        <210> 1315
        <211> 259
        <212>Amino acid
        <213> Homo sapiens

        <400> 1315
Gly Leu Arg Asp Pro Phe Arg Arg Lys Arg Arg Leu Lys Pro Gln Val
 1   ·5   10   15
Lys Met Ser Asn Tyr Val Asn Asp Met Trp Pro Gly Ser Pro Gln Glu
            20   25 .   30
Lys Asp Ser Pro Ser Thr Ser Arg Ser Gly Gly Ser Ser Arg Leu Ser
    35   40   45
Ser Arg Ser Arg Ser Arg Ser Phe Ser Arg Ser Ser Arg Ser His Ser
    50   55   60
Arg Val Ser Ser Arg Phe Ser Ser Arg Ser Arg Arg Ser Lys Ser Arg
65   70   75   80
Ser Arg Ser Arg Arg Arg His Gln Arg Lys Tyr Arg Arg Tyr Ser Arg
            85   90   95

```
Ser Tyr Ser Arg Ser Arg Ser Arg Ser Arg Ser Arg Arg Tyr Arg Glu
            100                 105                 110
Arg Arg Tyr Gly Phe Thr Arg Arg Tyr Tyr Arg Ser Pro Ser Arg Tyr
        115                 120                 125
Arg Ser Arg Ser Arg Ser Arg Ser Arg Ser Arg Gly Arg Ser Tyr Cys
    130                 135                 140
Gly Arg Ala Tyr Ala Ile Ala Arg Gly Gln Arg Tyr Tyr Gly Phe Gly
145                 150                 155                 160
Arg Thr Val Tyr Pro Glu Glu His Ser Arg Trp Arg Asp Arg Ser Arg
                165                 170                 175
Thr Arg Ser Arg Ser Arg Thr Pro Phe Arg Leu Ser Glu Lys Asp Arg
            180                 185                 190
Met Glu Leu Leu Glu Ile Ala Lys Thr Asn Ala Ala Lys Ala Leu Gly
        195                 200                 205
Thr Thr Asn Ile Asp Leu Pro Ala Ser Leu Arg Thr Val Pro Ser Ala
    210                 215                 220
Lys Glu Thr Ser Arg Gly Ile Gly Val Ser Ser Asn Gly Ala Lys Pro
225                 230                 235                 240
Glu Val Ser Ile Leu Gly Leu Ser Glu Gln Asn Phe Gln Lys Ala Asn
                245                 250                 255
Cys Gln Ile
        259
```

```
<210> 1316
<211> 678
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1316
Ala Glu Gly Ser Thr Met Asp Leu Thr Lys Met Gly Met Ile Gln Leu
  1           5                 10                  15
Gln Asn Pro Asn His Pro Thr Gly Leu Leu Cys Lys Ala Asn Gln Met
            20                  25                  30
Arg Leu Ala Gly Thr Leu Cys Asp Val Val Ile Met Val Asp Ser Gln
        35                  40                  45
Glu Phe His Ala His Arg Thr Val Leu Ala Cys Thr Ser Lys Met Phe
    50                  55                  60
Glu Ile Leu Phe His Arg Asn Ser Gln His Tyr Thr Leu Asp Phe Leu
65                  70                  75                  80
Ser Pro Lys Thr Phe Gln Gln Ile Leu Glu Tyr Ala Tyr Thr Ala Thr
                85                  90                  95
Leu Gln Ala Lys Ala Glu Asp Leu Asp Leu Leu Tyr Ala Ala Glu
            100                 105                 110
Ile Leu Glu Ile Glu Tyr Leu Glu Gln Cys Leu Lys Met Leu Glu
        115                 120                 125
Thr Ile Gln Ala Ser Asp Asp Asn Asp Thr Glu Ala Thr Met Ala Asp
    130                 135                 140
Gly Gly Ala Glu Glu Lys Lys Asp Arg Lys Ala Arg Tyr Leu Lys Asn
145                 150                 155                 160
Ile Phe Ile Ser Lys His Ser Ser Glu Glu Ser Gly Tyr Ala Ser Val
                165                 170                 175
Ala Gly Gln Ser Leu Pro Gly Pro Met Val Asp Gln Ser Pro Ser Val
            180                 185                 190
Ser Thr Ser Phe Gly Leu Ser Ala Met Ser Pro Thr Lys Ala Ala Val
        195                 200                 205
Asp Ser Leu Met Thr Ile Gly Gln Ser Leu Leu Gln Gly Thr Leu Gln
    210                 215                 220
Pro Pro Ala Gly Pro Glu Glu Pro Thr Leu Ala Gly Gly Gly Arg His
225                 230                 235                 240
```

817

```
Pro Gly Val Ala Glu Val Lys Thr Glu Met Met Gln Val Asp Glu Val
            245                 250                 255
Pro Ser Gln Asp Ser Pro Gly Ala Ala Glu Ser Ser Ile Ser Gly Gly
            260                 265                 270
Met Gly Asp Lys Val Glu Glu Arg Gly Lys Glu Gly Pro Gly Thr Pro
            275                 280                 285
Thr Arg Ser Ser Val Ile Thr Ser Ala Arg Glu Leu His Tyr Gly Arg
    290                 295                 300
Glu Glu Ser Ala Glu Gln Val Pro Pro Pro Ala Glu Ala Gly Gln Ala
305                 310                 315                 320
Pro Thr Gly Arg Pro Glu His Pro Ala Pro Pro Glu Lys His Leu
                325             330                 335
Gly Ile Tyr Ser Val Leu Pro Asn His Lys Ala Asp Ala Val Leu Ser
            340                 345                 350
Met Pro Ser Ser Val Thr Ser Gly Leu His Val Gln Pro Ala Leu Ala
        355                 360                 365
Val Ser Met Asp Phe Ser Thr Tyr Gly Gly Leu Leu Pro Gln Gly Phe
    370                 375                 380
Ile Gln Arg Glu Leu Phe Ser Lys Leu Gly Glu Leu Ala Val Gly Met
385                 390                 395                 400
Lys Ser Glu Ser Arg Thr Ile Gly Glu Gln Cys Ser Val Cys Gly Val
            405                 410                 415
Glu Leu Pro Asp Asn Glu Ala Val Glu Gln His Arg Lys Leu His Ser
            420                 425                 430
Gly Met Lys Thr Tyr Gly Cys Glu Leu Cys Gly Lys Arg Phe Leu Asp
        435                 440                 445
Ser Leu Arg Leu Arg Met His Leu Leu Ala His Ser Ala Gly Ala Lys
    450                 455                 460
Ala Phe Val Cys Asp Gln Cys Gly Ala Gln Phe Ser Lys Glu Asp Ala
465                 470                 475                 480
Leu Glu Thr His Arg Gln Thr His Thr Gly Thr Asp Met Ala Val Phe
            485                 490                 495
Cys Leu Leu Cys Gly Lys Arg Phe Gln Ala Gln Ser Ala Leu Gln Gln
        500                 505                 510
His Met Glu Val His Ala Gly Val Arg Ser Tyr Ile Cys Ser Glu Cys
    515                 520                 525
Asn Arg Thr Phe Pro Ser His Thr Ala Leu Lys Arg His Leu Arg Ser
    530                 535                 540
His Thr Gly Asp His Pro Tyr Glu Cys Glu Phe Cys Gly Ser Cys Phe
545                 550                 555                 560
Arg Asp Glu Ser Thr Leu Lys Ser His Lys Arg Ile His Thr Gly Glu
            565                 570                 575
Lys Pro Tyr Glu Cys Asn Gly Cys Gly Lys Lys Phe Ser Leu Lys His
            580                 585                 590
Gln Leu Glu Thr His Tyr Arg Val His Thr Gly Glu Lys Pro Phe Glu
    595                 600                 605
Cys Lys Leu Cys His Gln Arg Ser Arg Asp Tyr Ser Ala Met Ile Lys
    610                 615                 620
His Leu Arg Thr His Asn Gly Ala Ser Pro Tyr Gln Cys Thr Ile Cys
625                 630                 635                 640
Thr Glu Tyr Cys Pro Ser Leu Ser Ser Met Gln Lys His Met Lys Gly
            645                 650                 655
His Lys Pro Glu Glu Ile Pro Pro Asp Trp Arg Ile Glu Lys Thr Tyr
            660             665                 670
Leu Tyr Leu Cys Tyr Val
            675         678
```

<210> 1317
<211> 74
<212> Amino acid
<213> Homo sapiens

```
<400> 1317
Ile Trp Glu Ala Pro Thr Leu Ile Phe Thr Leu Ala Gly Gly Arg Ala
1               5                   10                  15
Leu Gly His Pro Pro Met Gln Lys Gly Ser Gln Gly Cys Ala Leu Pro
            20                  25                  30
His Pro Leu Pro Gly Ala Ser Leu Pro Ala Gln Pro Gly Pro Ala Asp
            35                  40                  45
His Arg Gly Trp Glu Cys Arg Ile Gly Gly Glu Ala Ser Val Phe Thr
    50                  .55                 60
His Leu Phe Cys Leu Pro His Ser Pro Thr
65              70              74
```

```
<210> 1318
<211> 351
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1318
Ala Ser Gly Ser Pro Ala Pro Ser Ser Ser Ser Ala Met Ala Ala Ala
1               5                   10                  15
Cys Gly Pro Gly Ala Ala Gly Tyr Cys Leu Leu Leu Gly Leu His Leu
            20                  25                  30
Phe Leu Leu Thr Ala Gly Pro Ala Leu Gly Trp Asn Asp Pro Asp Arg
            35                  40                  45
Met Leu Leu Arg Asp Val Lys Ala Leu Thr Leu His Tyr Asp Arg Tyr
    50                  55                  60
Thr Thr Ser Arg Arg Leu Asp Pro Ile Pro Gln Leu Lys Cys Val Gly
65                  70                  75                  80
Gly Thr Ala Gly Cys Asp Ser Tyr Thr Pro Lys Val Ile Gln Cys Gln
            85                  90                  95
Asn Lys Gly Trp Asp Gly Tyr Asp Val Gln Trp Glu Cys Lys Thr Asp
            100                 105                 110
Leu Asp Ile Ala Tyr Lys Phe Gly Lys Thr Val Val Ser Cys Glu Gly
    115                 120                 125
Tyr Glu Ser Ser Glu Asp Gln Tyr Val Leu Arg Gly Ser Cys Gly Leu
    130                 135                 140
Glu Tyr Asn Leu Asp Tyr Thr Glu Leu Gly Leu Gln Lys Leu Lys Glu
145                 150                 155                 160
Ser Gly Lys Gln His Gly Phe Ala Ser Phe Ser Asp Tyr Tyr Tyr Lys
            165                 170                 175
Trp Ser Ser Ala Asp Ser Cys Asn Met Ser Gly Leu Ile Thr Ile Val
            180                 185                 190
Val Leu Leu Gly Ile Ala Phe Val Val Tyr Lys Leu Phe Leu Ser Asp
    195                 200                 205
Gly Gln Tyr Ser Pro Pro Pro Tyr Ser Glu Tyr Pro Pro Phe Ser His
    210                 215                 220
Arg Tyr Gln Arg Phe Thr Asn Ser Ala Gly Pro Pro Pro Gly Phe
225                 230                 235                 240
Lys Ser Glu Phe Thr Gly Pro Gln Asn Thr Gly His Gly Ala Thr Ser
            245                 250                 255
Gly Phe Gly Ser Ala Phe Thr Gly Gln Gln Gly Tyr Glu Asn Ser Gly
            260                 265                 270
Pro Gly Phe Trp Thr Gly Leu Gly Thr Gly Gly Ile Leu Gly Tyr Leu
            275                 280                 285
Phe Gly Ser Asn Arg Ala Ala Thr Pro Phe Ser Asp Ser Trp Tyr Tyr
    290                 295                 300
```

Pro Ser Tyr Pro Pro Ser Tyr Pro Gly Thr Trp Asn Arg Ala Tyr Ser
305   310   315   320
Pro Leu His Gly Gly Ser Gly Ser Tyr Ser Val Cys Ser Asn Ser Asp
            325   330   335
Thr Lys Thr Arg Thr Ala Ser Gly Tyr Gly Gly Thr Arg Arg Arg
            340   345   350 351

        <210> 1319
        <211> 310
        <212>Amino acid
        <213> Homo sapiens

        <400> 1319
Gly Arg Cys Gly Ala Met Ala Ala Gly Leu Ala Arg Leu Leu Leu Leu
1   5   10   15
Leu Gly Leu Ser Ala Gly Gly Pro Ala Pro Ala Gly Ala Ala Lys Met
            20   25   30
Lys Val Val Glu Glu Pro Asn Ala Phe Gly Val Asn Asn Pro Phe Leu
        35   40   45
Pro Gln Ala Ser Arg Leu Gln Ala Lys Arg Asp Pro Ser Pro Val Ser
    50   55   60
Gly Pro Val His Leu Phe Arg Leu Ser Gly Lys Cys Phe Ser Leu Val
65   70   75   80
Glu Ser Thr Tyr Lys Tyr Glu Phe Cys Pro Phe His Asn Val Thr Gln
            85   90   95
His Glu Gln Thr Phe Arg Trp Asn Ala Tyr Ser Gly Ile Leu Gly Ile
            100   105   110
Trp His Glu Trp Glu Ile Ala Asn Asn Thr Phe Thr Gly Met Trp Met
        115   120   125
Arg Asp Gly Asp Ala Cys Arg Ser Arg Ser Arg Gln Ser Lys Val Glu
    130   135   140
Leu Ala Cys Gly Lys Ser Asn Arg Leu Ala His Val Ser Glu Pro Ser
145   150   155   160
Thr Cys Val Tyr Ala Leu Thr Phe Glu Thr Pro Leu Val Cys His Pro
            165   170   175
His Ala Leu Leu Val Tyr Pro Thr Leu Pro Glu Ala Leu Gln Arg Gln
            180   185   190
Trp Asp Gln Val Glu Gln Asp Leu Ala Asp Glu Leu Ile Thr Pro Gln
    195   200   205
Gly His Glu Lys Leu Leu Arg Thr Leu Phe Glu Asp Ala Gly Tyr Leu
    210   215   220
Lys Thr Pro Glu Glu Asn Glu Pro Thr Gln Leu Glu Gly Gly Pro Asp
225   230   235   240
Ser Leu Gly Phe Glu Thr Leu Glu Asn Cys Arg Lys Ala His Lys Glu
            245   250   255
Leu Ser Lys Glu Ile Lys Arg Leu Lys Gly Leu Leu Thr Gln His Gly
            260   265   270
Ile Pro Tyr Thr Arg Pro Thr Glu Thr Ser Asn Leu Glu His Leu Gly
    275   280   285
His Glu Thr Pro Arg Ala Lys Ser Pro Glu Gln Leu Arg Gly Asp Pro
    290   295   300
Gly Leu Arg Gly Ser Leu
305   310

        <210> 1320
        <211> 313
        <212>Amino acid
        <213> Homo sapiens

<400> 1320

```
Asn Ser Phe Trp Ser Val Leu Phe Leu Val Gln Glu Glu Thr Glu Val
1               5                   10                  15
Ala Arg Cys Asn Ala Gln His Arg Leu Arg Gln Ser Arg Asp Ser Lys
            20                  25                  30
Pro Asp Pro Ser Phe Arg Ser Gln Pro Ile Asp Ser Ser Ile Ser Phe
            35                  40                  45
Ala Gly Ser Asp Ile Gln Pro Leu Phe Ser Phe Ala Ser Val Asp Gly
        50                  55                  60
Thr Gln Val Gly Glu Ala Glu Glu Trp Ala Gly Pro Trp Ala Glu Ala
65                  70                  75                  80
Thr Leu Leu Pro Gly Pro Gly Asn Arg Trp Pro Pro Arg Ala Gly Leu
                85                  90                  95
Ser Gly Asn Trp Leu Glu Glu Asp Gly Asp Trp Pro Ser Leu Pro Glu
            100                 105                 110
Val Val Gly Phe Val Ser Glu Arg Glu Leu Phe Arg Asp Ala Leu Gly
        115                 120                 125
Ala Gly Cys Arg Ile Leu Leu Ile Cys Glu Met Gln Leu Thr His Gln
    130                 135                 140
Leu Asp Leu Phe Pro Glu Cys Arg Val Thr Leu Leu Leu Phe Lys Asp
145                 150                 155                 160
Val Lys Asn Ala Gly Asp Leu Arg Arg Lys Ala Met Glu Gly Thr Ile
                165                 170                 175
Asp Gly Ser Leu Ile Asn Pro Thr Val Ile Val Asp Pro Phe Gln Ile
            180                 185                 190
Leu Val Ala Ala Asn Lys Ala Val His Leu Tyr Lys Leu Gly Lys Met
            195                 200                 205
Lys Thr Arg Thr Leu Ser Thr Glu Ile Ile Phe Asn Leu Ser Pro Asn
    210                 215                 220
Asn Asn Ile Ser Glu Ala Leu Lys Lys Phe Gly Ile Ser Ala Asn Asp
225                 230                 235                 240
Thr Ser Ile Leu Ile Val Tyr Ile Glu Glu Gly Glu Lys Gln Ile Asn
                245                 250                 255
Gln Glu Tyr Leu Ile Ser Gln Val Glu Gly His Gln Val Ser Leu Lys
            260                 265                 270
Asn Leu Pro Glu Ile Met Asn Ile Thr Glu Val Lys Lys Ile Tyr Lys
    275                 280                 285
Leu Ser Ser Gln Glu Glu Ser Ile Gly Thr Leu Leu Asp Ala Ile Ile
    290                 295                 300
Cys Arg Met Ser Thr Lys Asp Val Leu
305                 310         313
```

<210> 1321
<211> 891
<212>Amino acid
<213> Homo sapiens

<400> 1321

```
Gln Arg Ser Trp Ala Gly Pro Gly Ala Gly Pro Glu Ala Gly Thr Arg
1               5                   10                  15
Pro Pro Ala Arg Gly Arg Arg Arg Gln Pro Gly Asn Val Asp Pro Arg
            20                  25                  30
Arg Arg Ala Pro Gln Leu Arg Ser Gln Met Gln Val Ala Met Ala Arg
        35                  40                  45
```

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```
Ala Thr Thr Ala Thr Gly Asn Arg Leu Trp Pro Gly Leu Leu Ile Met
    50                  55                  60
Leu Gly Ser Leu Cys His Arg Gly Ser Pro Cys Gly Leu Ser Thr His
65                  70                  75                  80
Ile Glu Ile Gly His Arg Ala Leu Glu Phe Leu Gln Leu His Asn Gly
                85                  90                  95
Arg Val Asn Tyr Arg Glu Leu Leu Leu Glu His Gln Asp Ala Tyr Gln
            100                 105                 110
Ala Gly Ile Val Phe Pro Asp Cys Phe Tyr Pro Ser Ile Cys Lys Gly
            115                 120                 125
Gly Lys Phe His Asp Val Ser Glu Ser Thr His Trp Thr Pro Phe Leu
    130                 135                 140
Asn Ala Ser Val His Tyr Ile Arg Glu Asn Tyr Pro Leu Pro Trp Glu
145                 150                 155                 160
Lys Asp Thr Glu Lys Leu Val Ala Phe Leu Phe Gly Ile Thr Ser His
                165                 170                 175
Met Ala Ala Asp Val Ser Trp His Ser Leu Gly Leu Glu Gln Gly Phe
            180                 185                 190
Leu Arg Thr Met Gly Ala Ile Asp Phe His Gly Ser Tyr Ser Glu Ala
    195                 200                 205
His Ser Ala Gly Asp Phe Gly Gly Asp Val Leu Ser Gln Phe Glu Phe
    210                 215                 220
Asn Phe Asn Tyr Leu Ala Arg Arg Trp Tyr Val Pro Val Lys Asp Leu
225                 230                 235                 240
Leu Gly Ile Tyr Glu Lys Leu Tyr Gly Arg Lys Val Ile Thr Glu Asn
            245                 250                 255
Val Ile Val Asp Cys Ser His Ile Gln Phe Leu Glu Met Tyr Gly Glu
            260                 265                 270
Met Leu Ala Val Ser Lys Leu Tyr Pro Thr Tyr Ser Thr Lys Ser Pro
    275                 280                 285
Phe Leu Val Glu Gln Phe Gln Glu Tyr Phe Leu Gly Gly Leu Asp Asp
    290                 295                 300
Met Ala Phe Trp Ser Thr Asn Ile Tyr His Leu Thr Ile Phe Met Leu
305                 310                 315                 320
Glu Asn Gly Thr Ser Asp Cys Asn Leu Pro Glu Asn Pro Leu Phe Ile
                325                 330                 335
Ala Cys Gly Gly Gln Gln Asn His Thr Gln Gly Ser Lys Met Gln Lys
            340                 345                 350
Asn Asp Phe His Arg Asn Leu Thr Thr Ser Leu Thr Glu Ser Val Asp
    355                 360                 365
Arg Asn Ile Asn Tyr Thr Glu Arg Gly Val Phe Phe Ser Val Asn Ser
    370                 375                 380
Trp Thr Pro Asp Ser Met Ser Phe Ile Tyr Lys Ala Leu Glu Arg Asn
385                 390                 395                 400
Ile Arg Thr Met Phe Ile Gly Gly Ser Gln Leu Ser Gln Lys His Val
            405                 410                 415
Ser Ser Pro Leu Ala Ser Tyr Phe Leu Ser Phe Pro Tyr Ala Arg Leu
            420                 425                 430
Gly Trp Ala Met Thr Ser Ala Asp Leu Asn Gln Asp Gly His Gly Asp
    435                 440                 445
Leu Val Val Gly Ala Pro Gly Tyr Ser Arg Pro Gly His Ile His Ile
    450                 455                 460
Gly Arg Val Tyr Leu Ile Tyr Gly Asn Asp Leu Gly Leu Pro Pro Val
465                 470                 475                 480
Asp Leu Asp Leu Asp Lys Glu Ala His Arg Ile Leu Glu Gly Phe Gln
            485                 490                 495
Pro Ser Gly Arg Phe Gly Ser Ala Leu Ala Val Leu Asp Phe Asn Val
            500                 505                 510
Asp Gly Val Pro Asp Leu Ala Val Gly Ala Pro Ser Val Gly Ser Glu
    515                 520                 525
Gln Leu Thr Tyr Lys Gly Ala Val Tyr Val Tyr Phe Gly Ser Lys Gln
    530                 535                 540
Gly Gly Met Ser Ser Ser Pro Asn Ile Thr Ile Ser Cys Gln Asp Ile
545                 550                 555                 560
```

```
Tyr Cys Asn Leu Gly Trp Thr Leu Leu Ala Ala Asp Val Asn Gly Asp
              565             570             575
Ser Glu Pro Asp Leu Val Ile Gly Ser Pro Phe Ala Pro Gly Gly Gly
              580             585             590
Lys Gln Lys Gly Ile Val Ala Ala Phe Tyr Ser Gly Pro Ser Leu Ser
      595             600             605
Asp Lys Glu Lys Leu Asn Val Glu Ala Ala Asn Trp Thr Val Arg Gly
    610             615             620
Glu Glu Asp Phe Ser Trp Phe Gly Tyr Ser Leu His Gly Val Thr Val
625             630             635             640
Asp Asn Arg Thr Leu Leu Leu Val Gly Ser Pro Thr Trp Lys Asn Ala
              645             650             655
Ser Arg Leu Gly His Leu Leu His Ile Arg Asp Glu Lys Lys Ser Leu
              660             665             670
Gly Arg Val Tyr Gly Tyr Phe Pro Pro Asn Gly Gln Ser Trp Phe Thr
      675             680             685
Ile Ser Gly Asp Lys Ala Met Gly Lys Leu Gly Thr Ser Leu Ser Ser
    690             695             700
Gly His Val Leu Met Asn Gly Thr Leu Lys Gln Val Leu Leu Val Gly
705             710             715             720
Ala Pro Thr Tyr Asp Asp Val Ser Lys Val Ala Phe Leu Thr Val Thr
              725             730             735
Leu His Gln Gly Gly Ala Thr Arg Met Tyr Ala Leu Thr Ser Asp Ala
              740             745             750
Gln Pro Leu Leu Leu Ser Thr Phe Ser Gly Asp Arg Arg Phe Ser Arg
      755             760             765
Phe Gly Gly Val Leu His Leu Ser Asp Leu Asp Asp Asp Gly Leu Asp
    770             775             780
Glu Ile Ile Met Ala Ala Pro Leu Arg Ile Ala Asp Val Thr Ser Gly
785             790             795             800
Leu Ile Gly Gly Glu Asp Gly Arg Val Tyr Val Tyr Asn Gly Lys Glu
              805             810             815
Thr Thr Leu Gly Asp Met Thr Gly Lys Cys Lys Ser Trp Ile Thr Pro
      820             825             830
Cys Pro Glu Glu Lys Ala Gln Tyr Val Leu Ile Ser Pro Glu Ala Ser
      835             840             845
Ser Arg Phe Gly Ser Ser Leu Ile Thr Val Arg Ser Lys Ala Lys Asn
    850             855             860
Gln Val Val Ile Ala Ala Gly Arg Ser Ser Leu Gly Ala Arg Leu Ser
865             870             875             880
Gly Ala Leu His Val Tyr Ser Leu Gly Ser Asp
              885             890 891
```

```
<210> 1322
<211> 119
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1322
Ser Leu Arg Asn Ser Ala Arg Gly Leu Lys Met Ala Ala Ser Ala Ala
1               5               10              15
Arg Gly Ala Ala Ala Leu Arg Arg Ser Ile Asn Gln Pro Val Ala Phe
              20              25              30
Val Arg Arg Ile Pro Trp Thr Ala Ala Ser Ser Gln Leu Lys Glu His
      35              40              45
Phe Ala Gln Phe Gly His Val Arg Arg Cys Ile Leu Pro Phe Asp Lys
    50              55              60
Glu Thr Gly Phe His Arg Gly Leu Gly Trp Val Gln Phe Ser Ser Glu
65              70              75              80
```

```
Glu Gly Leu Arg Asn Ala Leu Gln Gln Glu Asn His Ile Ile Asp Gly
                 85                  90                  95
Val Lys Val Gln Val His Thr Arg Arg Pro Lys Leu Pro Gln Thr Ser
            100              105              110
Asp Asp Glu Lys Lys Asp Phe
            115          119
```

```
<210> 1323
<211> 257
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1323
Gly Ser Ser Asn Ile His Ser Ala Ser Thr His Gly Phe Cys His Trp
 1               5                  10                  15
Phe Ser Ser Pro Ser Thr Leu Lys Arg Gln Lys Gln Ala Ile Arg Phe
                 20                  25                  30
Gln Lys Ile Arg Arg Gln Met Glu Ala Pro Gly Ala Pro Pro Arg Thr
            35                  40                  45
Leu Thr Trp Glu Ala Met Glu Gln Ile Arg Tyr Leu His Glu Glu Phe
        50                  55                  60
Pro Glu Ser Trp Ser Val Pro Arg Leu Ala Glu Gly Phe Asp Val Ser
 65                  70                  75                  80
Thr Asp Val Ile Arg Arg Val Leu Lys Ser Lys Phe Leu Pro Thr Leu
                 85                  90                  95
Glu Gln Lys Leu Lys Gln Asp Gln Lys Val Leu Lys Lys Ala Gly Leu
            100              105              110
Ala His Ser Leu Gln His Leu Arg Gly Ser Gly Asn Thr Ser Lys Leu
            115              120              125
Leu Pro Ala Gly His Ser Val Ser Gly Ser Leu Leu Met Pro Gly His
        130              135              140
Glu Ala Ser Ser Lys Asp Pro Asn His Ser Thr Ala Leu Lys Val Ile
145              150              155              160
Glu Ser Asp Thr His Arg Thr Asn Thr Pro Arg Arg Arg Lys Gly Arg
                 165              170              175
Asn Lys Glu Ile Gln Asp Leu Glu Glu Ser Phe Val Pro Val Ala Ala
            180              185              190
Pro Leu Gly His Pro Arg Glu Leu Gln Lys Tyr Ser Ser Asp Ser Glu
        195              200              205
Ser Pro Arg Gly Thr Gly Ser Gly Ala Leu Pro Ser Gly Gln Lys Leu
    210              215              220
Glu Glu Leu Lys Ala Glu Glu Pro Asp Asn Phe Ser Ser Lys Val Val
225              230              235              240
Gln Arg Gly Arg Glu Phe Phe Asp Ser Asn Gly Asn Phe Leu Tyr Arg
                 245              250              255
Ile
257
```

```
<210> 1324
<211> 273
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1324
```

```
Glu Thr Arg Val Lys Thr Ser Leu Glu Leu Leu Arg Thr Gln Leu Glu
 1               5                   10                  15
Pro Thr Gly Thr Val Gly Asn Thr Ile Met Thr Ser Gln Pro Val Pro
            20                  25                  30
Asn Glu Thr Ile Ile Val Leu Pro Ser Asn Val Ile Asn Phe Ser Gln
        35                  40                  45
Ala Glu Lys Pro Glu Pro Thr Asn Gln Gly Gln Asp Ser Leu Lys Lys
    50                  55                  60
His Leu His Ala Glu Ile Lys Val Ile Gly Thr Ile Gln Ile Leu Cys
65                  70                  75                      80
Gly Met Met Val Leu Ser Leu Gly Ile Ile Leu Ala Ser Ala Ser Phe
                85                  90                  95
Ser Pro Asn Phe Thr Gln Val Thr Ser Thr Leu Leu Asn Ser Ala Tyr
            100                 105                 110
Pro Phe Ile Gly Pro Phe Phe Phe Ile Ile Ser Gly Ser Leu Ser Ile
        115                 120                 125
Ala Thr Glu Lys Arg Leu Thr Lys Leu Leu Val His Ser Ser Leu Val
    130                 135                 140
Gly Ser Ile Leu Ser Ala Leu Ser Ala Leu Val Gly Phe Ile Ile Leu
145                 150                 155                 160
Ser Val Lys Gln Ala Thr Leu Asn Pro Ala Ser Leu Gln Cys Glu Leu
            165                 170                 175
Asp Lys Asn Asn Ile Pro Thr Arg Ser Tyr Val Ser Tyr Phe Tyr His
            180                 185                 190
Asp Ser Leu Tyr Thr Thr Asp Cys Tyr Thr Ala Lys Ala Ser Leu Ala
    195                 200                 205
Gly Thr Leu Ser Leu Met Leu Ile Cys Thr Leu Leu Glu Phe Cys Leu
    210                 215                 220
Ala Val Leu Thr Ala Val Leu Arg Trp Lys Gln Ala Tyr Ser Asp Phe
225                 230                 235                 240
Pro Gly Ser Val Leu Phe Leu Pro His Ser Tyr Ile Gly Asn Ser Gly
            245                 250                 255
Met Ser Ser Lys Met Thr His Asp Cys Gly Tyr Glu Glu Leu Leu Thr
            260                 265                 270
Ser
273
```

```
<210> 1325
<211> 477
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1325
Glu Met Val Gly Ala Met Trp Lys Val Ile Val Ser Leu Val Leu Leu
 1               5                   10                  15
Met Pro Gly Pro Cys Asp Gly Leu Phe Arg Ser Leu Tyr Arg Ser Val
            20                  25                  30
Ser Met Pro Pro Lys Gly Asp Ser Gln Pro Leu Phe Leu Thr Pro
        35                  40                  45
Tyr Ile Glu Ala Gly Lys Ile Gln Lys Gly Arg Glu Leu Ser Leu Val
    50                  55                  60
Gly Pro Phe Pro Gly Leu Asn Met Lys Ser Tyr Ala Gly Phe Leu Thr
65                  70                  75                      80
Val Asn Lys Thr Tyr Asn Ser Asn Leu Phe Phe Trp Phe Phe Pro Ala
                85                  90                  95
Gln Ile Gln Pro Glu Asp Ala Pro Val Val Leu Trp Leu Gln Gly Gly
            100                 105                 110
Pro Gly Gly Ser Ser Met Phe Gly Leu Phe Val Glu His Gly Pro Tyr
        115                 120                 125
```

Val Val Thr Ser Asn Met Thr Leu Arg Asp Arg Asp Phe Pro Trp Thr
130   135   140
Thr Thr Leu Ser Met Leu Tyr Ile Asp Asn Pro Val Gly Thr Gly Phe
145   150   155   160
Ser Phe Thr Asp Asp Thr His Gly Tyr Ala Val Asn Glu Asp Asp Val
                165   170   175
Ala Arg Asp Leu Tyr Ser Ala Leu Ile Gln Phe Phe Gln Ile Phe Pro
            180   185   190
Glu Tyr Lys Asn Asn Asp Phe Tyr Val Thr Gly Glu Ser Tyr Ala Gly
        195   200   205
Lys Tyr Val Pro Ala Ile Ala His Leu Ile His Ser Leu Asn Pro Val
    210   215   220
Arg Glu Val Lys Ile Asn Leu Asn Gly Ile Ala Ile Gly Asp Gly Tyr
225   230   235   240
Ser Asp Pro Glu Ser Ile Ile Gly Gly Tyr Ala Glu Phe Leu Tyr Gln
                245   250   255
Ile Gly Leu Leu Asp Glu Lys Gln Lys Lys Tyr Phe Gln Lys Gln Cys
            260   265   270
His Glu Cys Ile Glu His Ile Arg Lys Gln Asn Trp Phe Glu Ala Phe
            275   280   285
Glu Ile Leu Asp Lys Leu Leu Asp Gly Asp Leu Thr Ser Asp Pro Ser
        290   295   300
Tyr Phe Gln Asn Val Thr Gly Cys Ser Asn Tyr Tyr Asn Phe Leu Arg
305   310   315   320
Cys Thr Glu Pro Glu Asp Gln Leu Tyr Tyr Val Lys Phe Leu Ser Leu
            325   330   335
Pro Glu Val Arg Gln Ala Ile His Val Gly Asn Gln Thr Phe Asn Asp
            340   345   350
Gly Thr Ile Val Glu Lys Tyr Leu Arg Glu Asp Thr Val Gln Ser Val
        355   360   365
Lys Pro Trp Leu Thr Glu Ile Met Asn Asn Tyr Lys Val Leu Ile Tyr
    370   375   380
Asn Gly Gln Leu Asp Ile Ile Val Ala Ala Ala Leu Thr Glu Arg Ser
385   390   395   400
Leu Met Gly Met Asp Trp Lys Gly Ser Gln Glu Tyr Lys Lys Ala Glu
                405   410   415
Lys Lys Val Trp Lys Ile Phe Lys Ser Asp Ser Glu Val Ala Gly Tyr
            420   425   430
Ile Arg Gln Ala Gly Asp Phe His Gln Val Ile Ile Arg Gly Gly Gly
        435   440   445
His Ile Leu Pro Tyr Asp Gln Pro Leu Arg Ala Phe Asp Met Ile Asn
    450   455   460
Arg Phe Ile Tyr Gly Lys Gly Trp Asp Pro Tyr Val Gly
465   470   475   477

    <210> 1326
    <211> 160
    <212>Amino acid
    <213> Homo sapiens

    <400> 1326
Arg Asp Glu Arg Ala Lys Val Pro Phe Arg Ser Thr Glu Gly Gly Arg
1   5   10   15
Arg Arg Arg Arg Arg Met Glu Ala Val Val Phe Val Phe Ser Leu Leu
            20   25   30
Asp Cys Cys Ala Leu Ile Phe Leu Ser Val Tyr Phe Ile Ile Thr Leu
            35   40   45
Ser Asp Leu Glu Cys Asp Tyr Ile Asn Ala Arg Ser Cys Cys Ser Lys
    50   55   60

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```
Leu Asn Lys Trp Val Ile Pro Glu Leu Ile Gly His Thr Ile Val Thr
65              70              75              80
Val Leu Leu Leu Met Ser Leu His Trp Phe Ile Phe Leu Leu Asn Leu
            85              90                  95
Pro Val Ala Thr Trp Asn Ile Tyr Arg Tyr Ile Met Val Pro Ser Gly
        100             105             110
Asn Met Gly Val Phe Asp Pro Thr Glu Ile His Asn Arg Gly Gln Leu
        115             120             125
Lys Ser His Met Lys Glu Ala Met Ile Lys Leu Gly Phe His Leu Leu
    130             135             140
Cys Phe Phe Met Tyr Leu Tyr Ser Met Ile Leu Ala Leu Ile Asn Asp
145             150             155             160
```

```
<210> 1327
<211> 131
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1327
Gln Ser Pro Gly His Gly Ala Pro Cys Gln Leu Ser Ser Ser His Ser
1               5               10              15
Arg Ser Asn Arg Leu Leu Ser Pro Met Ala Arg Ala Thr Leu Ser Ala
            20              25              30
Ala Pro Ser Asn Pro Arg Leu Leu Arg Val Ala Leu Leu Leu Leu Leu
        35              40              45
Leu Val Ala Ala Ser Arg Arg Ala Ala Gly Ala Pro Leu Ala Thr Glu
    50              55              60
Leu Arg Cys Gln Cys Leu Gln Thr Leu Gln Gly Ile His Leu Lys Asn
65              70              75              80
Ile Gln Ser Val Lys Val Lys Ser Pro Gly Pro His Cys Ala Gln Thr
            85              90              95
Glu Val Ile Ala Thr Leu Lys Asn Gly Gln Lys Ala Cys Leu Asn Pro
        100             105             110
Ala Ser Pro Met Val Lys Lys Ile Ile Glu Lys Met Leu Lys Asn Gly
    115             120             125
Lys Ser Asn
    130 131
```

```
<210> 1328
<211> 44
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1328
His Pro Leu Ser Leu Val Phe Leu Ala Leu Asn Thr Gly Lys Glu Lys
1               5               10              15
Ser His Pro Gly Gly Gly Gly Glu Arg Pro Gly Leu Ala Gly Gln Gly
            20              25              30
Glu Pro Asp His Pro Ala Gly Ala Arg Asp Gly Arg
        35              40              44
```

```
     <210> 1329
     <211> 525
     <212>Amino acid
     <213> Homo sapiens




     <400> 1329
Cys Thr Pro Val Ala Arg Ser Met Ala Thr Thr Ala Thr Cys Thr Arg
 1               5                  10                 15
Phe Thr Asp Asp Tyr Gln Leu Phe Glu Glu Leu Gly Lys Gly Ala Phe
            20                  25                 30
Ser Val Val Arg Arg Cys Val Lys Lys Thr Ser Thr Gln Glu Tyr Ala
        35                  40                  45
Ala Lys Ile Ile Asn Thr Lys Lys Leu Ser Ala Arg Asp His Gln Lys
    50                  55                  60
Leu Glu Arg Glu Ala Arg Ile Cys Arg Leu Leu Lys His Pro Asn Ile
 65                  70                  75                  80
Val Arg Leu His Asp Ser Ile Ser Glu Glu Gly Phe His Tyr Leu Val
                85                  90                  95
Phe Asp Leu Val Thr Gly Gly Glu Leu Phe Glu Asp Ile Val Ala Arg
            100                 105                 110
Glu Tyr Tyr Ser Glu Ala Asp Ala Ser His Cys Ile His Gln Ile Leu
            115                 120                 125
Glu Ser Val Asn His Ile His Gln His Asp Ile Val His Arg Asp Leu
130                 135                 140
Lys Pro Glu Asn Leu Leu Leu Ala Ser Lys Cys Lys Gly Ala Ala Val
145                 150                 155                 160
Lys Leu Ala Asp Phe Gly Leu Ala Ile Glu Val Gln Gly Glu Gln Gln
            165                 170                 175
Ala Trp Phe Gly Phe Ala Gly Thr Pro Gly Tyr Leu Ser Pro Glu Val
            180                 185                 190
Leu Arg Lys Asp Pro Tyr Gly Lys Pro Val Asp Ile Trp Ala Cys Gly
        195                 200                 205
Val Ile Leu Tyr Ile Leu Leu Val Gly Tyr Pro Pro Phe Trp Asp Glu
    210                 215                 220
Asp Gln His Lys Leu Tyr Gln Gln Ile Lys Ala Gly Ala Tyr Asp Phe
225                 230                 235                 240
Pro Ser Pro Glu Trp Asp Thr Val Thr Pro Glu Ala Lys Asn Leu Ile
            245                 250                 255
Asn Gln Met Leu Thr Ile Asn Pro Ala Lys Arg Ile Thr Ala Asp Gln
            260                 265                 270
Ala Leu Lys His Pro Trp Val Cys Gln Arg Ser Thr Val Ala Ser Met
        275                 280                 285
Met His Arg Gln Glu Thr Val Glu Cys Leu Arg Lys Phe Asn Ala Arg
    290                 295                 300
Arg Lys Leu Lys Gly Ala Ile Leu Thr Thr Met Leu Val Ser Arg Asn
305                 310                 315                 320
Phe Ser Ala Ala Lys Ser Leu Leu Asn Lys Lys Ser Asp Gly Gly Val
            325                 330                 335
Lys Pro Gln Ser Asn Asn Lys Asn Ser Leu Val Ser Pro Ala Gln Glu
            340                 345                 350
Pro Ala Pro Leu Gln Thr Ala Met Glu Pro Gln Thr Thr Val Val His
        355                 360                 365
Asn Ala Thr Asp Gly Ile Lys Gly Ser Thr Glu Ser Cys Asn Thr Thr
370                 375                 380
Thr Glu Asp Glu Asp Leu Lys Val Arg Lys Gln Glu Ile Ile Lys Ile
385                 390                 395                 400
Thr Glu Gln Leu Ile Glu Ala Ile Asn Asn Gly Asp Phe Glu Ala Tyr
            405                 410                 415
Thr Lys Ile Cys Asp Pro Gly Leu Thr Ser Phe Glu Pro Glu Ala Leu
            420                 425                 430
```

```
Gly Asn Leu Val Glu Gly Met Asp Phe His Lys Phe Tyr Phe Glu Asn
        435             440                 445
Leu Leu Ser Lys Asn Ser Lys Pro Ile His Thr Thr Ile Leu Asn Pro
    450                 455                 460
His Val His Val Ile Gly Glu Asp Ala Ala Cys Ile Ala Tyr Ile Arg
465             470                 475                     480
Leu Thr Gln Tyr Ile Asp Gly Gln Gly Arg Pro Arg Thr Ser Gln Ser
                485                 490                 495
Glu Glu Thr Arg Val Trp His Arg Arg Asp Gly Lys Trp Leu Asn Val
        500             505                 510
His Tyr His Cys Ser Gly Ala Pro Ala Ala Pro Leu Gln
        515             520                 525


    <210> 1330
    <211> 205
    <212>Amino acid
    <213> Homo sapiens




    <400> 1330
Asn Arg Arg Thr Val Lys Met Leu Leu Glu Leu Ser Glu Glu His Lys
  1           5               10                  15
Glu His Leu Ala Phe Leu Pro Gln Val Asp Ser Ala Val Val Ala Glu
        20              25                  30
Phe Gly Arg Ile Ala Val Glu Phe Leu Arg Arg Gly Ala Asn Pro Lys
        35              40                  45
Ile Tyr Glu Gly Ala Ala Arg Lys Leu Asn Val Ser Ser Asp Thr Val
    50              55                  60
Gln His Gly Val Glu Gly Leu Thr Tyr Leu Leu Thr Glu Ser Ser Lys
65              70                  75                  80
Leu Met Ile Ser Glu Leu Asp Phe Gln Asp Ser Val Phe Val Leu Gly
                85                  90                  95
Phe Ser Glu Glu Leu Asn Lys Leu Leu Leu Gln Leu Tyr Leu Asp Asn
            100             105             110
Arg Lys Glu Ile Arg Thr Ile Leu Ser Glu Leu Ala Pro Ser Leu Pro
        115             120             125
Ser Tyr His Asn Leu Glu Trp Arg Leu Asp Val Gln Leu Ala Ser Arg
    130             135             140
Ser Leu Arg Gln Gln Ile Lys Pro Ala Val Thr Ile Lys Leu His Leu
145             150             155             160
Asn Gln Asn Gly Asp His Asn Thr Lys Val Leu Gln Thr Asp Pro Ala
            165             170             175
Thr Leu Leu His Leu Val Gln Gln Leu Glu Gln Ala Leu Glu Glu Met
        180             185             190
Lys Thr Asn His Cys Arg Arg Val Val Arg Asn Ile Lys
        195             200             205


    <210> 1331
    <211> 78
    <212>Amino acid
    <213> Homo sapiens




    <400> 1331
Gly Thr Ser Ile Tyr Leu Ala His Arg Val Ala Arg Ala Trp Glu Leu
  1           5               10                  15
```

```
Ala Gln Phe Ile His His Thr Ser Lys Lys Ala Asp Val Val Leu Ala
              20                  25                  30
Cys Gly Asp Ser Ile Val His Pro Glu Asp Leu Ile Cys Cys Pro Leu
        35                  40                  45
Thr Gly Arg Ser Cys Leu Cys Asp Val His Leu Leu Ser Ser Leu Leu
    50                  55                  60
Ala Arg Leu Gly Arg Gly Tyr Ala Val Ser Leu Thr Asn Leu
65                  70                  75          78


        <210> 1332
        <211> 274
        <212>Amino acid
        <213> Homo sapiens




        <400> 1332
Arg Gly Cys Gly Ser Cys Gly Tyr Lys Pro Ser Ala Gly Pro Ala Trp
    1            5                10                  15
Arg Pro Arg Pro Pro Pro Ala Val Ser Pro Leu Arg His Pro Glu Pro
              20                  25                  30
Ala Lys Val Leu Ser Phe Ser Ser Cys Pro Leu Pro Ala Leu Gly Arg
        35                  40                  45
Thr Gly Pro Ser Arg Ala Ala Arg Ala Gln Ser Leu Thr Met Ala Ser
    50                  55                  60
Leu Phe Lys Lys Lys Thr Val Asp Asp Val Ile Lys Glu Gln Asn Arg
65                  70                  75                  80
Glu Leu Arg Gly Thr Gln Arg Ala Ile Ile Arg Asp Arg Ala Ala Leu
              85                  90                  95
Glu Lys Gln Glu Lys Gln Leu Glu Leu Glu Ile Lys Lys Met Ala Lys
              100                 105                 110
Ile Gly Asn Lys Glu Ala Cys Lys Val Leu Ala Lys Gln Leu Val His
        115                 120                 125
Leu Arg Lys Gln Lys Thr Arg Thr Phe Ala Val Ser Ser Lys Val Thr
    130                 135                 140
Ser Met Ser Thr Gln Thr Lys Val Met Asn Ser Gln Met Lys Met Ala
145                 150                 155                 160
Gly Ala Met Ser Thr Thr Ala Lys Thr Met Gln Ala Val Asn Lys Lys
              165                 170                 175
Met Asp Pro Gln Lys Thr Leu Gln Thr Met Gln Asn Phe Gln Lys Glu
              180                 185                 190
Asn Met Lys Met Glu Met Thr Glu Glu Met Ile Asn Asp Thr Leu Asp
        195                 200                 205
Asp Ile Phe Asp Gly Ser Asp Asp Glu Glu Glu Ser Gln Asp Ile Val
    210                 215                 220
Asn Gln Val Leu Asp Glu Ile Gly Ile Glu Ile Ser Gly Lys Met Ala
225                 230                 235                 240
Lys Ala Pro Ser Ala Ala Arg Ser Leu Pro Ser Ala Ser Thr Ser Lys
              245                 250                 255
Ala Thr Ile Ser Asp Glu Glu Ile Glu Arg Gln Leu Lys Ala Leu Gly
              260                 265                 270
Val Asp
274


        <210> 1333
        <211> 157
        <212>Amino acid
        <213> Homo sapiens
```

```
    <400> 1333
Ser Thr Asp Gly Asn Gly Ala Glu Arg Leu Phe Ala Glu Leu Arg Lys
 1               5                   10                  15
Met Asn Ala Arg Gly Leu Gly Ser Glu Leu Lys Asp Ser Ile Pro Val
                20                  25                  30
Thr Glu Leu Ser Ala Ser Gly Pro Phe Glu Ser His Asp Leu Leu Arg
            35                  40                  45
Lys Gly Phe Ser Cys Val Lys Asn Glu Leu Leu Pro Ser His Pro Leu
    50                  55                  60
Glu Leu Ser Glu Lys Asn Phe Gln Leu Asn Gln Asp Lys Met Asn Phe
65                  70                  75                  80
Ser Thr Leu Arg Asn Ile Gln Gly Leu Phe Ala Pro Leu Lys Leu Gln
                85                  90                  95
Met Glu Phe Lys Ala Val Gln Gln Val Gln Arg Leu Pro Phe Leu Ser
            100                 105                 110
Ser Ser Asn Leu Ser Leu Asp Val Leu Arg Gly Asn Asp Glu Thr Ile
        115                 120                 125
Gly Phe Glu Asp Ile Leu Asn Asp Pro Ser Gln Ser Glu Val Met Gly
    130                 135                 140
Glu Pro His Leu Met Val Glu Tyr Lys Leu Gly Leu Leu
145                 150                 155     157


    <210> 1334
    <211> 193
    <212>Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(193)
    <223> X = any amino acid or stop code



    <400> 1334
Arg Asn Met Lys Leu His Tyr Val Ala Val Leu Thr Leu Ala Ile Leu
 1               5                   10                  15
Met Phe Leu Thr Trp Leu Pro Glu Ser Leu Ser Cys Asn Lys Ala Leu
                20                  25                  30
Cys Ala Ser Asp Val Ser Lys Cys Leu Ile Gln Glu Leu Cys Gln Cys
            35                  40                  45
Arg Pro Gly Glu Gly Asn Cys Ser Cys Cys Lys Glu Cys Met Leu Cys
    50                  55                  60
Leu Gly Ala Leu Trp Asp Glu Cys Cys Asp Cys Val Gly Met Cys Asn
65                  70                  75                  80
Pro Arg Asn Tyr Ser Asp Thr Pro Pro Thr Ser Lys Ser Thr Val Glu
                85                  90                  95
Glu Leu His Glu Pro Ile Pro Ser Leu Phe Arg Ala Leu Thr Glu Gly
            100                 105                 110
Asp Thr Gln Leu Asn Trp Asn Ile Val Ser Phe Pro Val Ala Glu Glu
        115                 120                 125
Leu Ser His His Glu Asn Leu Val Ser Phe Leu Glu Thr Val Asn Gln
    130                 135                 140
Pro His His Gln Asn Val Ser Val Pro Ser Asn Asn Val His Ala Pro
145                 150                 155                 160
Tyr Ser Ser Asp Lys Glu Xaa Leu Pro Thr Val Asp Phe Phe His Ser
                165                 170                 175
Ala Pro Ser Cys Gly Leu Ser Met Xaa Ser Ile Ile Phe Phe Glu Glu
```

              180   185   190
Thr
193

          <210> 1335
          <211> 179
          <212>Amino acid
          <213> Homo sapiens

          <400> 1335
Val Gly Gly Val Pro Thr Trp Leu Glu Gly Cys Gly Ser Gly Asn Pro
 1   5   10   15
Ser Pro Arg Ser Gly Gly Gly Pro Gly Ala Arg Leu Thr Leu Pro Ala
              20   25   30
Leu Gln Met Thr Val His Asn Leu Tyr Leu Phe Asp Arg Asn Gly Val
              35   40   45
Cys Leu His Tyr Ser Glu Trp His Arg Lys Lys Gln Ala Gly Ile Pro
      50   55   60
Lys Glu Glu Glu Tyr Lys Leu Met Tyr Gly Met Leu Phe Ser Ile Arg
65   70   75   80
Ser Phe Val Ser Lys Met Ser Pro Leu Asp Met Lys Asp Gly Phe Leu
                  85   90   95
Ala Phe Gln Thr Ser Arg Tyr Lys Leu His Tyr Tyr Glu Thr Pro Thr
              100   105   110
Gly Ile Lys Val Val Met Asn Thr Asp Leu Gly Val Gly Pro Ile Arg
              115   120   125
Asp Val Leu His His Ile Tyr Ser Ala Leu Tyr Val Glu Leu Val Val
      130   135   140
Lys Asn Pro Leu Cys Pro Leu Gly Gln Thr Val Gln Ser Glu Leu Phe
145   150   155   160
Arg Ser Arg Leu Asp Ser Tyr Val Arg Ser Leu Pro Phe Phe Ser Ala
                  165   170   175
Arg Ala Gly
          179

          <210> 1336
          <211> 236
          <212>Amino acid
          <213> Homo sapiens

          <400> 1336
Pro Gly Leu Ser Gln Glu Pro Ser Gly Ser Met Glu Thr Val Val Ile
 1   5   10   15
Val Ala Ile Gly Val Leu Ala Thr Ile Phe Leu Ala Ser Phe Ala Ala
              20   25   30
Leu Val Leu Val Cys Arg Gln Arg Tyr Cys Arg Pro Arg Asp Leu Leu
      35   40   45
Gln Arg Tyr Asp Ser Lys Pro Ile Val Asp Leu Ile Gly Ala Met Glu
      50   55   60
Thr Gln Ser Glu Pro Ser Glu Leu Glu Leu Asp Asp Val Val Ile Thr
65   70   75   80
Asn Pro His Ile Glu Ala Ile Leu Glu Asn Glu Asp Trp Ile Glu Asp
                  85   90   95
Ala Ser Gly Leu Met Ser His Cys Ile Ala Ile Leu Lys Ile Cys His

                              832

```
                 100                      105                      110
Thr Leu Thr Glu Lys Leu Val Ala Met Thr Met Gly Ser Gly Ala Lys
             115                      120                      125
Met Lys Thr Ser Ala Ser Val Ser Asp Ile Ile Val Val Ala Lys Arg
         130                      135                      140
Ile Ser Pro Arg Val Asp Asp Val Val Lys Ser Met Tyr Pro Pro Leu
145                      150                      155                      160
Asp Pro Lys Leu Leu Asp Ala Arg Thr Thr Ala Leu Leu Leu Ser Val
                 165                      170                      175
Ser His Leu Val Leu Val Thr Arg Asn Ala Cys His Leu Thr Gly Gly
             180                      185                      190
Leu Asp Trp Ile Asp Gln Ser Leu Ser Ala Ala Glu Glu His Leu Glu
         195                      200                      205
Val Leu Arg Glu Ala Ala Leu Ala Ser Glu Pro Asp Lys Gly Leu Pro
     210                      215                      220
Gly Pro Glu Gly Phe Leu Gln Glu Gln Ser Ala Ile
225                      230                          235 236
```

```
<210> 1337
<211> 161
<212> Amino acid
<213> Homo sapiens
```

```
         <400> 1337
Val Gly Met Glu Leu Pro Ala Val Asn Leu Lys Val Ile Leu Leu Gly
  1               5                      10                      15
His Trp Leu Leu Thr Thr Trp Gly Cys Ile Val Phe Ser Gly Ser Tyr
             20                      25                      30
Ala Trp Ala Asn Phe Thr Ile Leu Ala Leu Gly Val Trp Ala Val Ala
         35                      40                      45
Gln Arg Asp Ser Ile Asp Ala Ile Ser Met Phe Leu Gly Gly Leu Leu
     50                      55                      60
Ala Thr Ile Phe Leu Asp Ile Val His Ile Ser Ile Phe Tyr Pro Arg
 65                      70                      75                      80
Val Ser Leu Thr Asp Thr Gly Arg Phe Gly Val Gly Met Ala Ile Leu
                 85                      90                      95
Ser Leu Leu Leu Lys Pro Leu Ser Cys Cys Phe Val Tyr His Met Tyr
             100                     105                     110
Arg Glu Arg Gly Gly Glu Leu Leu Val His Thr Gly Phe Leu Gly Ser
         115                     120                     125
Ser Gln Asp Arg Ser Ala Tyr Gln Thr Ile Asp Ser Ala Glu Ala Pro
     130                     135                     140
Ala Asp Pro Phe Ala Val Pro Glu Gly Arg Ser Gln Asp Ala Arg Gly
145                     150                     155                     160
Tyr
161
```

```
<210> 1338
<211> 200
<212> Amino acid
<213> Homo sapiens
```

```
         <400> 1338
Pro Ala Ser Arg Pro Leu Leu Gly Pro Asp Thr Gly Ser Val Ala Asn
```

```
     1                  . 5                        10                        15
   Ile Phe Lys Gly Leu Val Ile Leu Pro Glu Met Ser Leu Val Ile Arg
                  20                        25                        30
   Asn Leu Gln Arg Val Ile Pro Ile Arg Arg Ala Pro Leu Arg Ser Lys
                  35                        40                        45
   Ile Glu Ile Val Arg Arg Ile Leu Gly Val Gln Lys Phe Asp Leu Gly
                  50                        55                        60
   Ile Ile Cys Val Asp Asn Lys Asn Ile Gln His Ile Asn Arg Ile Tyr
   65                        70                        75                        80
   Arg Asp Arg Asn Val Pro Thr Asp Val Leu Ser Phe Pro Phe His Glu
                  85                        90                        95
   His Leu Lys Ala Gly Glu Phe Pro Gln Pro Asp Phe Pro Asp Asp Tyr
                  100                       105                       110
   Asn Leu Gly Asp Ile Phe Leu Gly Val Glu Tyr Ile Phe His Gln Cys
                  115                       120                       125
   Lys Glu Asn Glu Asp Tyr Asn Asp Val Leu Thr Val Thr Ala Thr His
                  130 .                     135                       140
   Gly Leu Cys His Leu Leu Gly Phe Thr His Gly Thr Glu Ala Glu Trp
   145                       150                       155                       160
   Gln Gln Met Phe Gln Lys Glu Lys Ala Val Leu Asp Glu Leu Gly Arg
                  165                       170                       175
   Arg Thr Gly Thr Arg Leu Gln Pro Leu Thr Pro Gly Pro Leu Pro Glu
                  180                      .185                       190
   Gly Ala Glu Gly Arg Val Pro Phe
                  195                       200
```

```
      <210> 1339
      <211> 267
      <212>Amino acid
      <213> Homo sapiens
```

```
      <400> 1339
   Leu Arg Asn Ala Leu Asp Val Leu His Arg Glu Val Pro Arg Val Leu
     1                   5                        10                        15
   Val Asn Leu Val Asp Phe Leu Asn Pro Thr Ile Met Arg Gln Val Phe
                  20                        25                        30
   Leu Gly Asn Pro Asp Lys Cys Pro Val Gln Gln Ala Met Leu Glu Pro
                  35                        40                        45
   Leu Gly Ser Lys Thr Glu Thr Leu Asp Leu Arg Ala Glu Met Pro Ile
                  50                        55                        60
   Thr Cys Pro Thr Gln Asn Glu Pro Phe Leu Arg Thr Pro Arg Asn Ser
   65                        70                        75                        80
   Asn Tyr Thr Tyr Pro Ile Lys Pro Ala Ile Glu Asn Trp Gly Ser Asp
                  85                        90                        95
   Phe Leu Cys Thr Glu Trp Lys Ala Ser Asn Ser Val Pro Thr Ser Val
                  100                       105                       110
   His Gln Leu Arg Pro Ala Asp Ile Lys Val Val Ala Ala Leu Gly Asp
                  115                       120                       125
   Ser Leu Thr Thr Ala Val Gly Ala Arg Pro Asn Asn Ser Ser Asp Leu
                  130                       135                       140
   Pro Thr Ser Trp Arg Gly Leu Ser Trp Ser Ile Gly Gly Asp Gly Asn
   145                       150                       155                       160
   Leu Glu Thr His Thr Thr Leu Pro Asn Ile Leu Lys Lys Phe Asn Pro
                  165                       170                       175
   Tyr Leu Leu Gly Phe Ser Thr Ser Thr Trp Glu Gly Thr Ala Gly Leu
                  180                       185                       190
   Asn Val Ala Ala Glu Gly Ala Arg Ala Arg Asp Met Pro Ala Gln Ala
                  195                       200                       205
   Trp Asp Leu Val Glu Arg Met Lys Asn Ser Pro Asp Ile Asn Leu Glu
```

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```
        210                    215                    220
Lys Asp Trp Lys Leu Val Thr Leu Phe Ile Gly Gly Asn Asp Leu Cys
225                    230                    235                    240
His Tyr Cys Glu Asn Pro Glu Ala His Leu Ala Thr Glu Tyr Val Gln
                245                    250                    255
His Ile Gln Gln Ala Leu Asp Ile Leu Ser Glu
                260                    265     267


        <210> 1340
        <211> 286
        <212> Amino acid
        <213> Homo sapiens



        <400> 1340
Val Val Glu Phe Leu Trp Ser Arg Arg Pro Ser Gly Ser Ser Asp Pro
  1                 5                    10                    15
Arg Pro Arg Arg Pro Ala Ser Lys Cys Gln Met Met Glu Glu Arg Ala
                20                    25                    30
Asn Leu Met His Met Met Lys Leu Ser Ile Lys Val Leu Leu Gln Ser
            35                    40                    45
Ala Leu Ser Leu Gly Arg Ser Leu Asp Ala Asp His Ala Pro Leu Gln
        50                    55                    60
Gln Phe Phe Val Val Met Glu His Cys Leu Lys His Gly Leu Lys Val
65                    70                    75                    80
Lys Lys Ser Phe Ile Gly Gln Asn Lys Ser Phe Phe Gly Pro Leu Glu
                85                    90                    95
Leu Val Glu Lys Leu Cys Pro Glu Ala Ser Asp Ile Ala Thr Ser Val
            100                    105                    110
Arg Asn Leu Pro Glu Leu Lys Thr Ala Val Gly Arg Gly Arg Ala Trp
        115                    120                    125
Leu Tyr Leu Ala Leu Met Gln Lys Lys Leu Ala Asp Tyr Leu Lys Val
        130                    135                    140
Leu Ile Asp Asn Lys His Leu Leu Ser Glu Phe Tyr Glu Pro Glu Ala
145                    150                    155                    160
Leu Met Met Glu Glu Glu Gly Met Val Ile Val Gly Leu Leu Val Gly
                165                    170                    175
Leu Asn Val Leu Asp Ala Asn Leu Cys Leu Lys Gly Glu Asp Leu Asp
            180                    185                    190
Ser Gln Val Gly Val Ile Asp Phe Ser Leu Tyr Leu Lys Asp Val Gln
        195                    200                    205
Asp Leu Asp Gly Gly Lys Glu His Glu Arg Ile Thr Asp Val Leu Asp
        210                    215                    220
Gln Lys Asn Tyr Val Glu Glu Leu Asn Arg His Leu Ser Cys Thr Val
225                    230                    235                    240
Gly Asp Leu Gln Thr Lys Ile Asp Gly Leu Glu Lys Thr Asn Ser Lys
                245                    250                    255
Leu Gln Glu Arg Val Ser Ala Ala Thr Asp Arg Ile Cys Ser Leu Gln
            260                    265                    270
Glu Glu Gln Gln Gln Leu Arg Glu Gln Asn Glu Leu Ile Arg
        275                    280                    285 286


        <210> 1341
        <211> 233
        <212> Amino acid
        <213> Homo sapiens
```

```
      <400> 1341
Lys Pro Glu Gly Ala Arg Arg Val Gln Phe Val Met Gly Leu Phe Gly
 1               5                  10                  15
Lys Thr Gln Glu Lys Pro Pro Lys Glu Leu Val Asn Glu Trp Ser Leu
             20                  25                  30
Lys Ile Arg Lys Glu Met Arg Val Val Asp Arg Gln Ile Arg Asp Ile
         35                  40                  45
Gln Arg Glu Glu Glu Lys Val Lys Arg Ser Val Lys Asp Ala Ala Lys
     50                  55                  60
Lys Gly Gln Lys Asp Val Cys Ile Val Leu Ala Lys Glu Met Ile Arg
 65                  70                  75                  80
Ser Arg Lys Ala Val Ser Lys Leu Tyr Ala Ser Lys Ala His Met Asn
                 85                  90                  95
Ser Val Leu Met Gly Met Lys Asn Gln Leu Ala Val Leu Arg Val Ala
             100                 105                 110
Gly Ser Leu Gln Lys Ser Thr Glu Val Met Lys Ala Met Gln Ser Leu
         115                 120                 125
Val Lys Ile Pro Glu Ile Gln Ala Thr Met Arg Glu Leu Ser Lys Glu
     130                 135                 140
Met Met Lys Ala Gly Ile Ile Glu Glu Met Leu Glu Asp Thr Phe Glu
145                 150                 155                 160
Ser Met Asp Asp Gln Glu Glu Met Glu Glu Glu Ala Glu Met Glu Ile
                 165                 170                 175
Asp Arg Ile Leu Phe Glu Ile Thr Ala Gly Ala Leu Gly Lys Ala Pro
             180                 185                 190
Ser Lys Val Thr Asp Ala Leu Pro Glu Pro Glu Pro Gly Ala Met
             195                 200                 205
Ala Ala Ser Glu Asp Glu Glu Glu Glu Glu Glu Ala Leu Glu Ala Met
     210                 215                 220
Gln Ser Arg Leu Ala Thr Leu Arg Ser
225                 230         233


      <210> 1342
      <211> 150
      <212>Amino acid
      <213> Homo sapiens




      <400> 1342
Arg Trp Asn Ser Ile Met Glu Leu Ala Leu Leu Cys Gly Leu Val Val
 1               5                  10                  15
Met Ala Gly Val Ile Pro Ile Gln Gly Gly Ile Leu Asn Leu Asn Lys
             20                  25                  30
Met Val Lys Gln Val Thr Gly Lys Met Pro Ile Leu Ser Tyr Trp Pro
         35                  40                  45
Tyr Gly Cys His Cys Gly Leu Gly Gly Arg Gly Gln Pro Lys Asp Ala
     50                  55                  60
Thr Asp Trp Cys Cys Gln Thr His Asp Cys Cys Tyr Asp His Leu Lys
 65                  70                  75                  80
Thr Gln Gly Cys Gly Ile Tyr Lys Asp Tyr Tyr Arg Tyr Asn Phe Ser
                 85                  90                  95
Gln Gly Asn Ile His Cys Ser Asp Lys Gly Ser Trp Cys Glu Gln Gln
             100                 105                 110
Leu Cys Ala Cys Asp Lys Glu Val Ala Phe Cys Leu Lys Arg Asn Leu
         115                 120                 125
Asp Thr Tyr Gln Lys Arg Leu Arg Phe Tyr Trp Arg Pro His Cys Arg
     130                 135                 140
Gly Gln Thr Pro Gly Cys
```

145   150

```
        <210> 1343
        <211> 127
        <212>Amino acid
        <213> Homo sapiens




        <400> 1343
Lys Thr Val Ala Glu Glu Ala Ser Val Gly Asn Pro Glu Gly Ala Phe
 1               5                  10                  15
Met Lys Met Leu Gln Ala Arg Lys Gln His Met Ser Thr Glu Leu Thr
            20                  25                  30
Ile Glu Ser Glu Ala Pro Ser Asp Ser Ser Gly Ile Asn Leu Ser Gly
          35                  40                  45
Phe Gly Ser Glu Gln Leu Asp Thr Asn Asp Glu Ser Asp Val Ser Ser
    50                  55                  60
Ala Leu Ser Tyr Ile Leu Pro Tyr Leu Ser Leu Arg Asn Leu Gly Ala
65                  70                  75                  80
Glu Ser Ile Leu Leu Pro Phe Thr Glu Gln Leu Phe Ser Asn Val Gln
                85                  90                  95
Asp Gly Asp Arg Leu Leu Ser Ile Leu Lys Asn Asn Arg Lys Ser Pro
            100                 105                 110
Ser Gln Ser Ser Leu Leu Gly Asn Lys Phe Lys Asn Lys Ile Phe
        115                 120                 125 127


        <210> 1344
        <211> 126
        <212>Amino acid
        <213> Homo sapiens




        <400> 1344
Leu Pro Leu Thr Leu Leu Leu Ala Ala Pro Phe Ala His Leu Leu Leu
 1               5                  10                  15
Pro Pro Gly His Asp Gln Ser Pro Cys Trp His Pro Gly Pro Ala Leu
            20                  25                  30
Ser Pro Gly Thr Leu Gly Pro Leu Ser Trp Ala Met Ala Asn Ser Gly
        35                  40                  45
Leu Gln Leu Leu Gly Tyr Phe Leu Ala Leu Gly Gly Trp Val Gly Ile
    50                  55                  60
Ile Ala Ser Thr Ala Leu Pro Gln Trp Lys Gln Ser Ser Tyr Ala Gly
65                  70                  75                  80
Asp Ala Ser Ile Gln Leu Arg Ser Lys Val Phe Val Leu Glu Ser Glu
                85                  90                  95
Trp Gly Gly Asp Ser Leu Gly Leu Pro Arg Asp Cys Gly Trp Ser Cys
            100                 105                 110
Leu Leu His Ser Ala Val Arg Ser Glu Lys Gly Phe Trp Ser
        115                 120                 125 126


        <210> 1345
        <211> 328
        <212>Amino acid
        <213> Homo sapiens
```

837

```
        <400> 1345
Asp Pro Arg Val Arg Pro Pro Leu Leu Gln Pro Pro Pro Leu Leu
 1               5                  10                  15
Pro Arg Leu Val Ile Leu Lys Met Ala Pro Leu Asp Leu Asp Lys Tyr
            20                  25                  30
Val Glu Ile Ala Arg Leu Cys Lys Tyr Leu Pro Glu Asn Asp Leu Lys
        35                  40                  45
Arg Leu Cys Asp Tyr Val Cys Asp Leu Leu Leu Glu Glu Ser Asn Val
    50                  55                  60
Gln Pro Val Ser Thr Pro Val Thr Val Cys Gly Asp Ile His Gly Gln
65                  70                  75                  80
Phe Tyr Asp Leu Cys Glu Leu Phe Arg Thr Gly Gly Gln Val Pro Asp
                85                  90                  95
Thr Asn Tyr Ile Phe Met Gly Asp Phe Val Asp Arg Gly Tyr Tyr Ser
            100                 105                 110
Leu Glu Thr Phe Thr Tyr Leu Leu Ala Leu Lys Ala Lys Trp Pro Asp
            115                 120                 125
Arg Ile Thr Leu Leu Arg Gly Asn His Glu Ser Arg Gln Ile Thr Gln
    130                 135                 140
Val Tyr Gly Phe Tyr Asp Glu Cys Gln Thr Lys Tyr Gly Asn Ala Asn
145                 150                 155                 160
Ala Trp Arg Tyr Cys Thr Lys Val Phe Asp Met Leu Thr Val Ala Ala
                165                 170                 175
Leu Ile Asp Glu Gln Ile Leu Cys Val His Gly Gly Leu Ser Pro Asp
            180                 185                 190
Ile Lys Thr Leu Asp Gln Ile Arg Thr Ile Glu Arg Asn Gln Glu Ile
    195                 200                 205
Pro His Lys Gly Ala Phe Cys Asp Leu Val Trp Ser Asp Pro Glu Asp
    210                 215                 220
Val Asp Thr Trp Ala Ile Ser Pro Arg Gly Ala Gly Trp Leu Phe Gly
225                 230                 235                 240
Ala Lys Val Thr Asn Glu Phe Val His Ile Asn Asn Leu Lys Leu Ile
            245                 250                 255
Cys Arg Ala His Gln Leu Val His Glu Gly Tyr Lys Phe Met Phe Asp
            260                 265                 270
Glu Lys Leu Val Thr Val Trp Ser Ala Pro Asn Tyr Cys Tyr Arg Cys
    275                 280                 285
Gly Asn Ile Ala Ser Ile Met Val Phe Lys Asp Val Asn Thr Arg Glu
    290                 295                 300
Pro Lys Leu Phe Arg Ala Val Pro Asp Ser Glu Arg Val Ile Pro Pro
305                 310                 315                 320
Arg Thr Thr Thr Pro Tyr Phe Leu
                325         328


        <210> 1346
        <211> 253
        <212>Amino acid
        <213> Homo sapiens




        <400> 1346
Ser Phe Ala Gly Ala Ala Ala Arg Pro Ser Thr Pro Pro Ala Ser Gly
 1               5                  10                  15
Arg Gly Ala Ala Pro Gly Arg Pro Gly Pro Ser Pro Met Asp Leu Arg
            20                  25                  30
Ala Gly Asp Ser Trp Gly Met Leu Ala Cys Leu Cys Thr Val Leu Trp
```

838

```
                 35                        40                        45
    His Leu Pro Ala Val Pro Ala Leu Asn Arg Thr Gly Asp Pro Gly Pro
         50                        55                        60
    Gly Pro Ser Ile Gln Lys Thr Tyr Asp Leu Thr Arg Tyr Leu Glu His
         65                        70                        75                        80
    Gln Leu Arg Ser Leu Ala Gly Thr Tyr Leu Asn Tyr Leu Gly Pro Pro
                      85                        90                        95
    Phe Asn Glu Pro Asp Phe Asn Pro Pro Arg Leu Gly Ala Glu Thr Leu
                 100                       105                       110
    Pro Arg Ala Thr Val Asp Leu Glu Val Trp Arg Ser Leu Asn Asp Lys
                 115                       120                       125
    Leu Arg Leu Thr Gln Asn Tyr Glu Ala Tyr Ser His Leu Leu Cys Tyr
         130                       135                       140
    Leu Arg Gly Leu Asn Arg Gln Ala Ala Thr Ala Glu Leu Arg Arg Ser
    145                       150                       155                       160
    Leu Ala His Phe Cys Thr Ser Leu Gln Gly Leu Leu Gly Ser Ile Ala
                      165                       170                       175
    Gly Val Met Ala Ala Leu Gly Tyr Pro Leu Pro Gln Pro Leu Pro Gly
                 180                       185                       190
    Thr Glu Pro Thr Trp Thr Pro Gly Pro Ala His Ser Asp Phe Leu Gln
                 195                       200                       205
    Lys Met Asp Asp Phe Trp Leu Leu Lys Glu Leu Gln Thr Trp Leu Trp
         210                       215                       220
    Arg Ser Ala Lys Asp Phe Asn Arg Leu Lys Lys Lys Met Gln Pro Pro
    225                       230                       235                       240
    Ala Ala Ala Val Thr Leu His Leu Gly Ala His Gly Phe
                 245                       250                       253


         <210> 1347
         <211> 195
         <212>Amino acid
         <213> Homo sapiens




         <400> 1347
    Ile Lys Ile Ser Leu Lys Lys Arg Ser Met Ser Gly Ile Ser Gly Cys
    1                   5                        10                       15
    Pro Phe Phe Leu Trp Gly Leu Leu Ala Leu Leu Gly Leu Ala Leu Val
                      20                        25                       30
    Ile Ser Leu Ile Phe Asn Ile Ser His Tyr Val Glu Lys Gln Arg Gln
         35                        40                        45
    Asp Lys Met Tyr Ser Tyr Ser Ser Asp His Thr Arg Val Asp Glu Tyr
         50                        55                        60
    Tyr Ile Glu Asp Thr Pro Ile Tyr Gly Asn Leu Asp Asp Met Ile Ser
    65                        70                        75                        80
    Glu Pro Met Asp Glu Asn Cys Tyr Glu Gln Met Lys Ala Arg Pro Glu
                      85                        90                        95
    Lys Ser Val Asn Lys Met Gln Glu Ala Thr Pro Ser Ala Gln Ala Thr
                 100                       105                       110
    Asn Glu Thr Gln Met Cys Tyr Ala Ser Leu Asp His Ser Val Lys Gly
         115                       120                       125
    Lys Arg Arg Lys Pro Arg Lys Gln Asn Thr His Phe Ser Asp Lys Asp
         130                       135                       140
    Gly Asp Glu Gln Leu His Ala Ile Asp Ala Ser Val Ser Lys Thr Thr
    145                       150                       155                       160
    Leu Val Asp Ser Phe Ser Pro Glu Ser Gln Ala Val Glu Glu Asn Ile
                      165                       170                       175
    His Asp Asp Pro Ile Arg Leu Phe Gly Leu Ile Arg Ala Lys Arg Glu
                 180                       185                       190
    Pro Ile Asn
```

195

```
<210> 1348
<211> 268
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1348
Val Glu Phe His Pro Gln Arg Ala Arg Ala Gly Ala Arg Ala Pro Ser
1               5                   10                  15
Met Gly Val Leu Leu Thr Gln Arg Thr Leu Leu Ser Leu Val Leu Ala
            20                  25                  30
Leu Leu Phe Pro Ser Met Ala Ser Met Ala Ala Ile Gly Ser Cys Ser
        35                  40                  45
Lys Glu Tyr Arg Val Leu Leu Gly Gln Leu Gln Lys Gln Thr Asp Leu
        50                  55                  60
Met Gln Asp Thr Ser Arg Leu Leu Asp Pro Tyr Ile Arg Ile Gln Gly
65                  70                  75                  80
Leu Asp Val Pro Lys Leu Arg Glu His Cys Arg Glu Arg Pro Gly Ala
                85                  90                  95
Phe Pro Ser Glu Glu Thr Leu Arg Gly Leu Gly Arg Arg Cys Phe Leu
            100                 105                 110
Gln Thr Leu Asn Ala Thr Leu Gly Cys Val Leu His Arg Leu Ala Asp
        115                 120                 125
Leu Glu Gln Arg Leu Pro Lys Ala Gln Asp Leu Glu Arg Ser Gly Leu
        130                 135                 140
Asn Ile Glu Asp Leu Glu Lys Leu Gln Met Ala Arg Pro Asn Ile Leu
145                 150                 155                 160
Gly Leu Arg Asn Asn Ile Tyr Cys Met Ala Gln Leu Leu Asp Asn Ser
                165                 170                 175
Asp Thr Ala Glu Pro Thr Lys Ala Gly Arg Gly Ala Ser Gln Pro Pro
            180                 185                 190
Thr Pro Thr Pro Ala Ser Asp Ala Phe Gln Arg Lys Leu Glu Gly Cys
            195                 200                 205
Arg Phe Leu His Gly Tyr His Arg Phe Met His Ser Val Gly Arg Val
        210                 215                 220
Phe Ser Lys Trp Gly Glu Ser Pro Asn Arg Ser Arg Arg His Ser Pro
225                 230                 235                 240
His Gln Ala Leu Arg Lys Gly Val Arg Arg Thr Arg Pro Ser Arg Lys
                245                 250                 255
Gly Lys Arg Leu Met Thr Arg Gly Gln Leu Pro Arg
            260                 265     268
```

```
<210> 1349
<211> 138
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1349
Asp Phe Pro Gly Arg Arg Phe Arg Leu Val Trp Leu Leu Val Leu Arg
1               5                   10                  15
Leu Pro Trp Arg Val Pro Gly Gln Leu Asp Pro Thr Thr Gly Arg Arg
            20                  25                  30
Phe Ser Glu His Lys Leu Cys Ala Asp Asp Glu Cys Ser Met Leu Met
```

```
            35                        40                        45
Tyr Arg Gly Glu Ala Leu Glu Asp Phe Thr Gly Pro Asp Cys Arg Phe
    50                        55                        60
Val Asn Phe Lys Lys Gly Asp Pro Val Tyr Val Tyr Tyr Lys Leu Ala
65                        70                        75                        80
Arg Gly Trp Pro Glu Val Trp Ala Gly Ser Val Gly Arg Thr Phe Gly
                85                        90                        95
Tyr Phe Pro Lys Asp Leu Ile Gln Val Val His Glu Tyr Thr Lys Glu
                100                       105                       110
Glu Leu Gln Val Pro Thr Asn Glu Thr Asp Phe Val Cys Phe Asp Gly
                115                       120                       125
Gly Arg Asp Asp Phe His Asn Tyr Asn Val
        130                       135                   138
```

```
        <210> 1350
        <211> 236
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1350
Ser Pro Leu Gly Lys Glu Gly Gln Glu Glu Val Arg Val Lys Ile Lys
1                   5                       10                        15
Asp Leu Asn Glu His Ile Val Cys Cys Leu Cys Ala Gly Tyr Phe Val
                20                        25                        30
Asp Ala Thr Thr Ile Thr Glu Cys Leu His Thr Phe Cys Lys Ser Cys
        35                        40                        45
Ile Val Lys Tyr Leu Gln Thr Ser Lys Tyr Cys Pro Met Cys Asn Ile
    50                        55                        60
Lys Ile His Glu Thr Gln Pro Leu Leu Asn Leu Lys Leu Asp Arg Val
65                        70                        75                        80
Met Gln Asp Ile Val Tyr Lys Leu Val Pro Gly Leu Gln Asp Ser Glu
                85                        90                        95
Glu Lys Arg Ile Arg Glu Phe Tyr Gln Ser Arg Gly Leu Asp Arg Val
                100                       105                       110
Thr Gln Pro Thr Gly Glu Glu Pro Ala Leu Ser Asn Leu Gly Leu Pro
        115                       120                       125
Phe Ser Ser Phe Asp His Ser Lys Ala His Tyr Tyr Arg Tyr Asp Glu
    130                       135                       140
Gln Leu Asn Leu Cys Leu Glu Arg Leu Ser Ser Gly Lys Asp Lys Asn
145                       150                       155                       160
Lys Ser Val Leu Gln Asn Lys Tyr Val Arg Cys Ser Val Arg Ala Glu
                165                       170                       175
Val Arg His Leu Arg Arg Val Leu Cys His Arg Leu Met Leu Asn Pro
        180                       185                       190
Gln His Val Gln Leu Leu Phe Asp Asn Glu Val Leu Pro Asp His Met
        195                       200                       205
Thr Met Lys Gln Ile Trp Leu Ser Arg Trp Phe Gly Lys Pro Ser Pro
    210                       215                       220
Leu Leu Leu Gln Tyr Ser Val Lys Glu Lys Arg Arg
225                   230                       235 236
```

```
        <210> 1351
        <211> 178
        <212>Amino acid
        <213> Homo sapiens
```

```
      <400> 1351
Leu Trp Trp Tyr Ser Ala His Ala Ala Val Asp Ala Met Met Asp Val
 1           5                  10                  15
Phe Gly Val Gly Phe Pro Ser Lys Val Pro Trp Lys Lys Met Ser Ala
        20                  25                  30
Glu Glu Leu Glu Asn Gln Tyr Cys Pro Ser Arg Trp Val Val Arg Leu
        35                  40                  45
Gly Ala Glu Glu Ala Leu Arg Thr Tyr Ser Gln Ile Gly Ile Glu Ala
    50                  55              60
Thr Thr Arg Ala Arg Ala Thr Arg Lys Ser Leu Leu His Val Pro Tyr
65                  70                  75                  80
Gly Asp Gly Glu Gly Glu Lys Val Asp Ile Tyr Phe Pro Asp Glu Ser
            85                  90                  95
Ser Glu Ala Thr Thr Arg Ala Arg Ala Thr Arg Lys Ser Leu Leu His
        100                 105                 110
Val Pro Tyr Gly Asp Gly Glu Gly Glu Lys Val Asp Ile Tyr Phe Pro
        115                 120                 125
Asp Glu Ser Ser Glu Ala Leu Pro Phe Phe Leu Phe Phe His Gly Gly
    130                 135                 140
Tyr Trp Gln Ser Gly Arg His Pro Gly Pro His Gly Arg Pro Gly Asp
145                 150                 155                 160
Pro Gln Arg Cys Val Cys Pro Glu Ala Val Ser Lys Gln Gln Ala Phe
                165                 170                 175
Ser Trp
    178
```

```
      <210> 1352
      <211> 284
      <212>Amino acid
      <213> Homo sapiens
```

```
      <400> 1352
Gly Val Arg Met Ala Ser Arg Gly Arg Arg Pro Glu His Gly Gly Pro
 1           5                  10                  15
Pro Glu Leu Phe Tyr Asp Glu Thr Glu Ala Arg Lys Tyr Val Arg Asn
        20                  25                  30
Ser Arg Met Ile Asp Ile Gln Thr Arg Met Ala Gly Arg Ala Leu Glu
        35                  40                  45
Leu Leu Tyr Leu Pro Glu Asn Lys Pro Cys Tyr Leu Leu Asp Ile Gly
    50                  55              60
Cys Gly Thr Gly Leu Ser Gly Ser Tyr Leu Ser Asp Glu Gly His Tyr
65                  70                  75                  80
Trp Val Gly Leu Asp Ile Ser Pro Ala Met Leu Asp Glu Ala Val Asp
            85                  90                  95
Arg Glu Ile Glu Gly Asp Leu Leu Leu Gly Asp Met Gly Gln Gly Ile
        100                 105                 110
Pro Phe Lys Pro Gly Thr Phe Asp Gly Cys Ile Ser Ile Ser Ala Val
        115                 120                 125
Gln Trp Leu Cys Asn Ala Asn Lys Lys Ser Glu Asn Pro Ala Lys Arg
    130                 135                 140
Leu Tyr Cys Phe Phe Ala Ser Leu Phe Ser Val Leu Val Arg Gly Ser
145                 150                 155                 160
Arg Ala Val Leu Gln Leu Tyr Pro Glu Asn Ser Glu Gln Leu Glu Leu
                165                 170                 175
Ile Thr Thr Gln Ala Thr Lys Ala Gly Phe Ser Gly Gly Met Val Val
            180                 185                 190
Asp Tyr Pro Asn Ser Ala Lys Ala Lys Lys Phe Tyr Leu Cys Leu Phe
```

```
          195                    200                    205
Ser Gly Pro Ser Thr Phe Ile Pro Glu Gly Leu Ser Glu Asn Gln Asp
    210                    215                    220
Glu Val Glu Pro Arg Glu Ser Val Phe Thr Asn Glu Arg Phe Pro Leu
225                    230                    235                    240
Arg Met Ser Arg Arg Gly Met Val Arg Lys Ser Arg Ala Trp Val Leu
              245                    250                    255
Glu Lys Lys Glu Arg His Arg Arg Gln Gly Arg Glu Val Arg Pro Asp
          260                    265                    270
Thr Gln Tyr Thr Gly Arg Lys Arg Lys Pro Arg Phe
          275                    280                    284


          <210> 1353
          <211> 363
          <212>Amino acid
          <213> Homo sapiens




          <400> 1353
Thr Leu Ile Cys Arg Met Ala Gly Cys Gly Glu Ile Asp His Ser Ile
  1               5                    10                    15
Asn Met Leu Pro Thr Asn Arg Lys Ala Asn Glu Ser Cys Ser Asn Thr
              20                    25                    30
Ala Pro Ser Leu Thr Val Pro Glu Cys Ala Ile Cys Leu Gln Thr Cys
          35                    40                    45
Val His Pro Val Ser Leu Pro Cys Lys His Val Phe Cys Tyr Leu Cys
      50                    55                    60
Val Lys Gly Ala Ser Trp Leu Gly Lys Arg Cys Ala Leu Cys Arg Gln
65                    70                    75                    80
Glu Ile Pro Glu Asp Phe Leu Asp Lys Pro Thr Leu Leu Ser Pro Glu
                  85                    90                    95
Glu Leu Lys Ala Ala Ser Arg Gly Asn Gly Glu Tyr Ala Trp Tyr Tyr
              100                    105                    110
Glu Gly Arg Asn Gly Trp Trp Gln Tyr Asp Glu Arg Thr Ser Arg Glu
          115                    120                    125
Leu Glu Asp Ala Phe Ser Lys Gly Lys Lys Asn Thr Glu Met Leu Ile
          130                    135                    140
Ala Gly Phe Leu Tyr Val Ala Asp Leu Glu Asn Met Val Gln Tyr Arg
145                    150                    155                    160
Arg Asn Glu His Gly Arg Arg Arg Lys Ile Lys Arg Asp Ile Ile Asp
              165                    170                    175
Ile Pro Lys Lys Gly Val Ala Gly Leu Arg Leu Asp Cys Asp Ala Asn
          180                    185                    190
Thr Val Asn Leu Ala Arg Glu Ser Ala Asp Gly Ala Asp Ser Val
          195                    200                    205
Ser Ala Gln Ser Gly Ala Ser Val Gln Pro Leu Val Ser Ser Val Arg
    210                    215                    220
Pro Leu Thr Ser Val Asp Gly Gln Leu Thr Ser Pro Ala Thr Pro Ser
225                    230                    235                    240
Pro Asp Ala Ser Thr Ser Leu Glu Asp Ser Phe Ala His Leu Gln Leu
              245                    250                    255
Ser Gly Asp Asn Thr Ala Glu Arg Ser His Arg Gly Glu Gly Glu Glu
          260                    265                    270
Asp His Glu Ser Pro Ser Ser Gly Arg Val Pro Ala Pro Asp Thr Ser
          275                    280                    285
Ile Glu Glu Thr Glu Ser Asp Ala Ser Ser Asp Ser Glu Asp Val Ser
          290                    295                    300
Ala Val Val Ala Gln His Ser Leu Thr Gln Gln Arg Leu Leu Val Ser
305                    310                    315                    320
Asn Ala Asn Gln Thr Val Pro Asp Arg Ser Asp Arg Ser Gly Thr Asp
```

```
                      325                      330                      335
       Arg Ser Val Ala Gly Gly Gly Thr Val Ser Val Ser Val Arg Ser Arg
                      340                      345                350
       Arg Pro Asp Gly Gln Cys Thr Val Thr Glu Val
                      355                      360      363
```

```
       <210> 1354
       <211> 368
       <212> Amino acid
       <213> Homo sapiens
```

```
       <400> 1354
   Gly Ala Thr Pro Leu Gly Ser Val Gly Gly Arg Thr Gly Lys Met Asp
   1                 5                      10                   15
   Ala Ala Thr Leu Thr Tyr Asp Thr Leu Arg Phe Ala Glu Phe Glu Asp
                 20                   25                   30
   Phe Pro Glu Thr Ser Glu Pro Val Trp Ile Leu Gly Arg Lys Tyr Ser
                 35                   40                   45
   Ile Phe Thr Glu Lys Asp Glu Ile Leu Ser Asp Val Ala Ser Arg Leu
             50                   55                   60
   Trp Phe Thr Tyr Arg Lys Asn Phe Pro Ala Ile Gly Gly Thr Gly Pro
   65                   70                   75                   80
   Thr Ser Asp Thr Gly Trp Gly Cys Met Leu Arg Cys Gly Gln Met Ile
                     85                   90                   95
   Phe Ala Gln Ala Leu Val Cys Arg His Leu Gly Arg Asp Trp Arg Trp
                 100                  105                  110
   Thr Gln Arg Lys Arg Gln Pro Asp Ser Tyr Phe Ser Val Leu Asn Ala
             115                  120                  125
   Phe Ile Asp Arg Lys Asp Ser Tyr Tyr Ser Ile His Gln Ile Ala Gln
         130                  135                  140
   Met Gly Val Gly Glu Gly Lys Ser Ile Gly Gln Trp Tyr Gly Pro Asn
   145                  150                  155                  160
   Thr Val Ala Gln Val Leu Lys Lys Leu Ala Val Phe Asp Thr Trp Ser
                 165                  170                  175
   Ser Leu Ala Val His Ile Ala Met Asp Asn Thr Val Val Met Glu Glu
                 180                  185                  190
   Ile Arg Arg Leu Cys Arg Thr Ser Val Pro Cys Ala Gly Ala Thr Ala
             195                  200                  205
   Phe Pro Ala Asp Ser Asp Arg His Cys Asn Gly Phe Pro Ala Gly Ala
         210                  215                  220
   Glu Val Thr Asn Arg Pro Ser Pro Trp Arg Pro Leu Val Leu Leu Ile
   225                  230                  235                  240
   Pro Leu Arg Leu Gly Leu Thr Asp Ile Asn Glu Ala Tyr Val Glu Thr
                 245                  250                  255
   Leu Lys His Cys Phe Met Met Pro Gln Ser Leu Gly Val Ile Gly Gly
                 260                  265                  270
   Lys Pro Asn Ser Ala His Tyr Phe Ile Gly Tyr Val Gly Glu Glu Leu
             275                  280                  285
   Ile Tyr Leu Asp Pro His Thr Thr Gln Pro Ala Val Glu Pro Thr Asp
         290                  295                  300
   Gly Cys Phe Ile Pro Asp Glu Ser Phe His Cys Gln His Pro Pro Cys
   305                  310                  315                  320
   Arg Met Ser Ile Ala Glu Leu Asp Pro Ser Ile Ala Val Val Arg Gly
                 325                  330                  335
   Gly His Leu Ser Thr Gln Ala Phe Gly Ala Glu Cys Cys Leu Gly Met
                 340                  345                  350
   Thr Arg Lys Thr Phe Gly Phe Leu Arg Phe Phe Phe Ser Met Leu Gly
             355                  360                  365      368
```

<210> 1355
<211> 117
<212>Amino acid
<213> Homo sapiens

.<400> 1355
Pro Thr Thr Ser Asn Arg Ala Ile Thr Leu Thr Ala Trp Pro Lys Ile
1   5   10   15
Pro Phe Leu Gly Ile Cys Glu Ala Lys Asn Pro Arg Ser Glu Asn Met
            20   25   30
Arg Leu Ala Thr Ile Leu Glu Val Ala Cys His His Leu Gly Ser Gly
        35   40   45
Pro Pro Pro Ser Trp Glu Leu Trp Glu Gln Gly Pro Pro Gly Asn Ser
    50   55   60
Ser Arg Tyr Ile Glu Phe Leu Asn Lys His Thr Tyr Ile Lys Gly Thr
65   70   75   80
Leu Arg Val Tyr Thr Lys Lys Phe Cys Met Leu Val Ile Lys Ser Phe
            85   90   95
Glu Ser Lys Ser Cys Val Cys Val Tyr Asp Phe Asp Ser Lys Ser Ser
            100   105   110
Val Asn Val Thr Val
        115   117

<210> 1356
<211> 126
<212>Amino acid
<213> Homo sapiens

<400> 1356
Pro Arg Val Arg Phe Arg Leu Leu His Val Thr Ser Ile Arg Ser Ala
1   5   10   15
Trp Ile Leu Cys Gly Ile Ile Trp Ile Leu Ile Met Ala Ser Ser Ile
            20   25   30
Met Leu Leu Asp Ser Gly Ser Glu Gln Asn Gly Ser Val Thr Ser Cys
        35   40   45
Leu Glu Leu Asn Leu Tyr Lys Ile Ala Lys Leu Gln Thr Val Asn Tyr
    50   55   60
Ile Ala Leu Val Val Gly Cys Leu Leu Pro Phe Phe Thr Leu Ser Ile
65   ·70   75   80
Cys Tyr Leu Leu Ile Ile Arg Val Leu Leu Lys Val Glu Val Pro Glu
            85   90   95
Ser Gly Leu Arg Val Ser His Arg Lys Ala Leu Thr Thr Ile Ile Ile
            100   105   110
Thr Leu Ile Ile Phe Phe Leu Cys Phe Leu Pro Tyr His Thr
        115   120   125 126

<210> 1357
<211> 222
<212>Amino acid
<213> Homo sapiens

<400> 1357

```
Gly Arg His Trp Leu Gly Ser Ala Gln Leu Thr Asp Gly Gly Ser Ala
1               5                   10                  15
Arg Lys Pro Lys Met Ala Val Pro Ala Ala Leu Ile Leu Arg Glu Ser
            20                  25                  30
Pro Ser Met Lys Lys Ala Val Ser Leu Ile Asn Ala Ile Asp Thr Gly
            35                  40                  45
Arg Phe Pro Arg Leu Leu Thr Arg Ile Leu Gln Lys Leu His Leu Lys
    50                  55                  60
Ala Glu Ser Ser Phe Ser Glu Glu Glu Glu Lys Leu Gln Ala Ala
65                  70                  75                  80
Phe Ser Leu Glu Lys Gln Asp Leu His Leu Val Leu Glu Thr Ile Ser
                85                  90                  95
Phe Ile Leu Glu Gln Ala Val Tyr His Asn Val Lys Pro Ala Ala Leu
            100                 105                 110
Gln Gln Gln Leu Glu Asn Ile His Leu Arg Gln Asp Lys Ala Glu Ala
            115                 120                 125
Phe Val Asn Thr Trp Ser Ser Met Gly Gln Glu Thr Val Glu Lys Phe
            130                 135                 140
Arg Gln Arg Ile Leu Ala Pro Cys Lys Leu Glu Thr Val Gly Trp Gln
145                 150                 155                 160
Leu Asn Leu Gln Met Ala His Ser Ala Gln Ala Lys Leu Lys Ser Pro
                165                 170                 175
Gln Ala Val Leu Gln Leu Gly Val Asn Asn Glu Asp Ser Lys Ser Leu
            180                 185                 190
Glu Lys Val Leu Val Glu Phe Ser His Lys Glu Leu Phe Asp Phe Tyr
            195                 200                 205
Asn Lys Leu Glu Thr Ile Gln Ala Gln Leu Asp Ser Leu Thr
    210                 215                 220     222
```

<210> 1358
<211> 116
<212> Amino acid
<213> Homo sapiens

<400> 1358

```
Glu Ala Ser Ser Ala Lys Thr Lys Arg Lys Glu Glu Lys Gly Pro Lys
1               5                   10                  15
Ala Lys Met Lys Leu Met Val Leu Val Phe Thr Ile Gly Leu Thr Leu
            20                  25                  30
Leu Leu Gly Val Gln Ala Met Pro Ala Asn Arg Leu Ser Cys Tyr Arg
            35                  40                  45
Lys Ile Leu Lys Asp His Asn Cys His Asn Leu Pro Glu Gly Val Ala
    50                  55                  60
Asp Leu Thr Gln Ile Asp Val Asn Val Gln Asp His Phe Trp Asp Gly
65                  70                  75                  80
Lys Gly Cys Glu Met Ile Cys Tyr Cys Asn Phe Ser Glu Leu Leu Cys
                85                  90                  95
Cys Pro Lys Asp Val Phe Phe Gly Pro Lys Ile Ser Phe Val Ile Pro
            100                 105                 110
Cys Asn Asn Gln
    115 116
```

<210> 1359

```
<211> 466
<212> Amino acid
<213> Homo sapiens
```

```
        <400> 1359
Lys Met Ala Glu Ala Val Phe His Ala Pro Lys Arg Lys Arg Arg Val
1               5                   10                  15
Tyr Glu Thr Tyr Glu Ser Pro Leu Pro Ile Pro Phe Gly Gln Asp His
            20                  25                  30
Gly Pro Leu Lys Glu Phe Lys Ile Phe Arg Ala Glu Met Ile Asn Asn
        35                  40                  45
Asn Val Ile Val Arg Asn Ala Glu Asp Ile Glu Gln Leu Tyr Gly Lys
    50                  55                  60
Gly Tyr Phe Gly Lys Gly Ile Leu Ser Arg Ser Arg Pro Ser Phe Thr
65                  70              .   75                  80
Ile Ser Asp Pro Lys Leu Val Ala Lys Trp Lys Asp Met Lys Thr Asn
            85                  90                  95
Met Pro Ile Ile Thr Ser Lys Arg Tyr Gln His Ser Val Glu Trp Ala
            100                 105                 110
Ala Glu Leu Met Arg Arg Gln Gly Gln Asp Glu Ser Thr Val Arg Arg
    .   115                 120                 125
Ile Leu Lys Asp Tyr Thr Lys Pro Leu.Glu His Pro Pro Val Lys Arg
    130 .              135                 140
Asn Glu Glu Ala Gln Val His Asp Lys Leu Asn Ser Gly Met Val Ser
145                 150                 155                 160
Asn Met Glu Gly Thr Ala Gly Gly Glu Arg Pro Ser Val Val Asn Gly
            165                 170                 175
Asp Ser Gly Lys Ser Gly Gly Val Gly Asp Pro Arg Glu Pro Leu Gly
            180                 185                 190
Cys Leu Gln Glu Gly Ser Gly Cys His Pro Thr Thr Glu Ser Phe Glu
            195                 200                 205
Lys Ser Val Arg Glu Asp Ala Ser Pro Leu Pro His Val Cys Cys Cys
    210                 215                 220
Lys Gln Asp Ala Leu Ile Leu Gln Arg Gly Leu His His Glu Asp Gly
225                 230                 235                 240
Ser Gln His Ile Gly Leu Leu His Pro Gly Asp Arg Gly Pro Asp His
            245             .   250                 255
Glu Tyr Val Leu Val Glu Glu Ala Glu Cys Ala Met Ser Glu Arg Glu
            260                 265                 270
Ala Ala Pro Asn Glu Glu Leu Val Gln Arg Asn Arg Leu Ile Cys Arg
    275                 280                 285
Arg Asn Pro Tyr Arg Ile Phe Glu Tyr Leu Gln Leu Ser Leu Glu Glu
    290                 295                 300
Ala Phe Phe Leu Val Tyr Ala Leu Gly Cys Leu Ser Ile Tyr Tyr Glu
305         .       310                 315                 320
Lys Glu Pro Leu Thr Ile Val Lys Leu Trp Lys Ala Phe Thr Val Val
            325                 330                 335
Gln Pro Thr Phe Arg Thr Thr Tyr Met Ala Tyr His Tyr Phe Arg Ser
            340 .               345                 350
Lys Gly Trp Val Pro Lys Val Gly Leu Lys Tyr Gly Thr Asp Leu Leu
    355             .           360                 365
Leu Tyr Arg Lys Gly Pro Pro Phe Tyr His Ala Ser Tyr Ser Val Ile
    370                 375                 380
Ile Glu Leu Val Asp Asp His Phe Glu Gly Ser Leu Arg Arg Pro Leu
385                 390                 395                 400
Ser Trp Lys Ser Leu Ala Ala Leu Ser Arg Val Ser Val Asn Val Ser
            405                 410                 415
Lys Glu Leu Met Leu Cys Tyr Leu Ile Lys Pro Ser Thr Met Thr Asp
            420                 425                 430
Lys Glu Met Glu Ser Pro Glu Cys Met Lys Arg Ile Lys Val Gln Glu
```

```
              435                    440                    445
Val Ile Leu Ser Arg Trp Val Ser Ser Arg Glu Arg Ser Asp Gln Asp
    450                    455                    460
Asp Leu
465 466


        <210> 1360
        <211> 419
        <212> Amino acid
        <213> Homo sapiens




        <400> 1360
Arg Asp Ile Trp Thr Met Asn Leu Gln Arg Tyr Trp Gly Glu Ile Pro
  1           5                  10                  15
Ile Ser Ser Ser Gln Thr Asn Arg Ser Ser Phe Asp Leu Leu Pro Arg
            20                  25                  30
Glu Phe Arg Leu Val Glu Val His Asp Pro Pro Leu His Gln Pro Ser
        35                  40                  45
Ala Asn Lys Pro Lys Pro Pro Thr Met Leu Asp Ile Pro Ser Glu Pro
    50                  55                  60
Cys Ser Leu Thr Ile His Thr Ile Gln Leu Ile Gln His Asn Arg Arg
65                  70                  75                  80
Leu Arg Asn Leu Ile Ala Thr Ala Gln Ala Gln Asn Gln Gln Gln Thr
            85                  90                  95
Glu Gly Val Lys Thr Glu Glu Ser Glu Pro Leu Pro Ser Cys Pro Gly
            100                 105                 110
Ser Pro Pro Leu Pro Asp Asp Leu Leu Pro Leu Asp Cys Lys Asn Pro
        115                 120                 125
Asn Ala Pro Phe Gln Ile Arg His Ser Asp Pro Glu Ser Asp Phe Tyr
    130                 135                 140
Arg Gly Lys Gly Glu Pro Val Thr Glu Leu Ser Trp His Ser Cys Arg
145                 150                 155                 160
Gln Leu Leu Tyr Gln Ala Val Ala Thr Ile Leu Ala His Ala Gly Phe
            165                 170                 175
Asp Cys Ala Asn Glu Ser Val Leu Glu Thr Leu Thr Asp Val Ala His
            180                 185                 190
Glu Tyr Cys Leu Lys Phe Thr Lys Leu Leu Arg Phe Ala Val Asp Arg
        195                 200                 205
Glu Ala Arg Leu Gly Gln Thr Pro Phe Pro Asp Val Met Glu Gln Val
    210                 215                 220
Phe His Glu Val Gly Ile Gly Ser Val Leu Ser Leu Gln Lys Phe Trp
225                 230                 235                 240
Gln His Arg Ile Lys Asp Tyr His Ser Tyr Met Leu Gln Ile Ser Lys
            245                 250                 255
Gln Leu Ser Glu Glu Tyr Glu Arg Ile Val Asn Pro Glu Lys Ala Thr
            260                 265                 270
Glu Asp Ala Lys Pro Val Lys Ile Lys Glu Glu Pro Val Ser Asp Ile
        275                 280                 285
Thr Phe Pro Val Ser Glu Glu Leu Glu Ala Asp Leu Ala Ser Gly Asp
    290                 295                 300
Gln Ser Leu Pro Met Gly Val Leu Gly Ala Gln Ser Glu Arg Phe Pro
305                 310                 315                 320
Ser Asn Leu Glu Val Glu Ala Ser Pro Gln Ala Ser Ser Ala Glu Val
            325                 330                 335
Asn Ala Ser Pro Leu Trp Asn Leu Ala His Val Lys Met Glu Pro Gln
            340                 345                 350
Glu Ser Glu Glu Gly Asn Val Ser Gly His Gly Val Leu Gly Ser Asp
        355                 360                 365
Val Phe Glu Glu Pro Met Ser Gly Met Ser Glu Ala Gly Ile Pro Gln
```

```
        370                   375                   380
Ser Pro Asp Asp Ser Asp Ser Ser Tyr Gly Ser His Ser Thr Asp Ser
385                   390                   395                   400
Leu Met Gly Ser Ser Pro Val Phe Asn Gln Arg Cys Lys Lys Arg Met
         ·         405                   410                   415
Arg Lys Ile
        419


        <210> 1361
        <211> 220
        <212>Amino acid
        <213> Homo sapiens




        <400> 1361
Arg Glu Gln Ile Leu Phe Ile Glu Ile Arg Asp Thr Ala Lys Gly Gly
 1               5                   10                  15
Glu Thr Glu Gln Pro Pro Ser Leu Ser Pro Leu His Gly Gly Arg Met
            20                  25                  30
Pro Glu Met Gly Glu Gly Ile Gln Ser Leu Ala Arg Glu Thr Gln Ser
         35                  40                  45
His Arg Gly Arg Arg Gln Gly Trp Asp Ala Thr Trp Val Thr Arg Cys
     50                  55              ·       60
Arg Glu Ser Leu Asn Arg Gly Gly Ala Gly Ala Gly Lys Arg Ala Gly
65                  70                  75                  80
Ala Leu Ala His His Val Phe Leu Ala Leu Ile Glu Pro Asn Leu Ala
             85          ·         90                  95
Glu Arg Glu Ala Ser Glu Glu Glu Val Lys Ala Cys Ser Asp Glu Thr
            100                 105       -         110
Val Val Ala Asp Leu Leu Val Lys Val Val Tyr Val Leu Gly Ala Ile
         115                 120                 125
Leu Lys Ile Phe Leu Arg Glu Gly Asn Val Leu Asn Gln His Ser Gly
         130                 135                 140
Met Asp Ile Glu Lys Tyr Ser Glu His Tyr Gln His Asp His Ser Pro
145                 150                 155                 160
Gly Ala Glu Asp Asp Ala Ala Gly Gly Gln Leu Arg Pro Thr Ala Gln
            165                 170                 175
Glu Arg Arg His Lys Glu Gly Ser Arg Gly Ser Pro Arg Cys Lys Arg
            180                 185                 190
Ala Arg Lys Ala Val Gly Glu Ser Pro Gly Cys Pro Arg Pro Arg Val
         195                 200                 205
Arg Pro Arg Val Arg Pro Arg Val Arg Pro Arg Val
         210                 215                 220


        <210> 1362
        <211> 82
        <212>Amino acid
        <213> Homo sapiens




        <400> 1362
Gly Thr Arg Gly Cys Cys Arg Glu Gly Thr Ala Tyr Ala Lys Ala Tyr
 1               5                   10                  15
Gln Phe Met Ala Ser His Leu Ser Leu Gly Lys Pro Val Ser Thr Gly
            20                  25                  30
Ser Ile Pro Arg Phe Asn Lys Ala Leu Phe Asn Lys Gln Ala Lys Cys
```

```
              35                    40                    45
Lys Pro Asn His Tyr Ser Phe Ile Gly Leu Ser Met Leu Ser Pro Glu
     50                    55                    60
Asn Phe Ser Ile Gly Cys Lys Tyr Ser Val Trp Phe Ser Glu Thr Lys
 65                    70                    75                    80
Gly Phe
     82
```

```
     <210> 1363
     <211> 143
     <212> Amino acid
     <213> Homo sapiens
```

```
     <400> 1363
Gly Ala Gln Gly Val Arg Val Gly Ile Gly Glu Val Gly Arg Val Gln
 1           5                    10                    15
Ala Pro Arg Val Ser Leu Leu His Ser Gln Gly Val Pro Arg Gly Gly
              20                    25                    30
Thr Gly Glu Ala Val Lys Glu Glu Gly Arg Gly Ser Ser Leu His Pro
         35                    40                    45
Pro Leu Pro Pro Gln Gly Leu Gly Glu Tyr Ala Ala Cys Gln Ser His
     50                    55                    60
Ala Phe Met Lys Gly Val Phe Thr Phe Val Thr Gly Thr Gly Met Ala
 65                    70                    75                    80
Phe Gly Leu Gln Met Phe Ile Gln Arg Lys Phe Pro Tyr Pro Leu Gln
              85                    90                    95
Trp Ser Leu Leu Val Ala Val Val Ala Gly Ser Val Val Ser Tyr Gly
              100                   105                   110
Val Thr Arg Val Glu Ser Glu Lys Cys Asn Asn Leu Trp Leu Phe Leu
         115                   120                   125
Glu Thr Gly Gln Leu Pro Lys Asp Arg Ser Thr Asp Gln Arg Ser
     130                   135                   140         143
```

```
     <210> 1364
     <211> 194
     <212> Amino acid
     <213> Homo sapiens
```

```
     <220>
     <221> misc_feature
     <222> (1)...(194)
     <223> X = any amino acid or stop code
```

```
     <400> 1364
Gly Thr Ser Glu Leu Leu Cys Ile Gln Arg Trp Asn Trp Gly Pro Ala
 1           5                    10                    15
Phe Pro Pro Arg Pro Gly Leu Ala Leu Ala Pro Thr Leu Gln Leu Leu
              20                    25                    30
Val Glu Met Gly Ser Ala Lys Ser Val Pro Val Thr Pro Ala Arg Pro
         35                    40                    45
Pro Pro His Asn Lys His Leu Ala Arg Val Ala Asp Pro Arg Ser Pro
     50                    55                    60
Ser Ala Gly Ile Leu Arg Thr Pro Ile Gln Val Glu Ser Ser Pro Gln
 65                    70                    75                    80
```

```
Pro Gly Leu Pro Ala Gly Glu Gln Leu Glu Gly Leu Lys His Ala Gln
              85                      90                      95
Asp Ser Asp Pro Arg Ser Pro Leu Gly Lys Asn Xaa Gly His Gly Trp
             100                     105                     110
Gln Val Gly Gln Gly Ser Asp Leu Gly Ser Pro Gln Pro Leu Pro Pro
             115                     120                     125
Ser Ala Ser His Leu Tyr Ser Ser Arg Ala Ser Arg Cys Ser Gln Pro
     130                     135                     140
Pro Cys Leu Ser Leu Pro Trp Phe Gly Val Arg Ser Ser Pro Ala Asn
145                     150                     155                     160
Thr Tyr His Val Pro Val Thr Ser Leu Cys Pro Ser Pro Ala Leu His
                 165                 170                     175
Tyr Thr Ala Leu Gln Ala Gly Ile Ile Ser Thr Ser Gln Ala Arg Ala
             180                     185                     190
Pro Arg
194
```

```
<210> 1365
<211> 114
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(114)
<223> X = any amino acid or stop code
```

```
<400> 1365
Pro Leu Leu Leu Pro Arg Phe Ile Asp Ile Pro Cys Leu Leu Cys Tyr
1               5               10                      15
Leu Thr Gln Val Thr Pro Asp Asp Met Tyr Ala Lys Ala Phe Leu Ile
             20                 25                     30
Lys Pro Asn Thr Ala Ile Thr Gly Thr Asp Arg Arg Lys Leu Arg Ala
         35                 40                     45
Asp Glu Thr Thr Asp Phe Pro Thr Leu Gly Thr Asp Gln Ile Tyr Glu
     50                     55                 60
Leu Leu Pro Gly Lys Asp Glu Leu Asn Ile Val Lys Ser Asn Ala His
65                     70                 75                     80
Lys Arg Asp Ala Xaa Thr Ala Tyr Val Ser Gly Glu Asn His Ile Leu
                 85                 90                     95
Ser Glu Pro Xaa Lys Asn Leu Tyr Pro Ala Val Asn Thr Leu Ser Ser
             100                 105                    110
Tyr Pro
114
```

```
<210> 1366
<211> 80
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1366
Ser Arg Gln Pro Pro Pro Leu Leu Thr Met Val Phe Leu Leu Glu Phe
1               5               10                      15
Leu Phe Leu Val Phe Phe Pro Gly Cys Val Asn Gln Leu Leu Leu Ser
```

```
                20                      25                      30
Tyr Pro Trp Gln Gly Gln Gly Thr Ser Leu Trp Ser Ser Leu Ser Phe
            35                      40                      45
His Trp Leu Leu Pro Gln Glu Asp Ser Ser Arg Leu Ser Ile Phe Pro
        50                      55                      60
Leu Arg Ala Gly Ser Pro Pro Gln Pro Ala Gln Ala Pro Gln Arg Ile
65                      70                      75                  80
```

```
<210> 1367
<211> 301
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1367
Lys Ser Arg Glu Gln Ser Ser Leu Phe Ala Ala Asp Ala Glu Arg Ser
1                   5                   10                      15
Trp Gly Gly Lys Ser Cys Cys Leu Leu Arg Trp Arg Phe Val Gly Lys
                20                      25                      30
Ala Ser His Phe Pro Arg Leu Leu Pro Leu Pro Gly Glu Glu Arg Pro
            35                      40                      45
Glu Thr Lys Glu Arg Ala Trp Lys Met Glu Gln Thr Trp Thr Arg Asp
        50                      55                      60
Tyr Phe Ala Glu Asp Asp Gly Glu Met Val Pro Arg Thr Ser His Thr
65                      70                      75                  80
Ala Ala Ser Val Ser Leu Thr Ala Phe Leu Ser Asp Thr Lys Asp Arg
                85                      90                      95
Gly Pro Pro Val Gln Ser Gln Ile Trp Arg Ser Gly Glu Lys Val Pro
                100                     105                     110
Phe Val Gln Thr Tyr Ser Leu Arg Ala Phe Glu Lys Pro Pro Gln Val
            115                     120                     125
Gln Thr Gln Ala Leu Arg Asp Phe Glu Lys His Leu Asn Asp Leu Lys
        130                     135                     140
Lys Glu Asn Phe Ser Leu Lys Leu Leu Ile Tyr Phe Leu Glu Glu Arg
145                     150                     155                 160
Met Gln Gln Lys Tyr Glu Ala Ser Arg Glu Asp Ile Tyr Lys Arg Asn
                165                     170                     175
Thr Glu Leu Lys Val Glu Val Glu Ser Leu Lys Arg Glu Leu Gln Asp
                180                     185                     190
Lys Lys Gln His Leu Asp Lys Thr Trp Ala Asp Val Glu Asn Leu Asn
        195                     200                     205
Ser Gln Asn Glu Ala Glu Leu Arg Arg Gln Phe Glu Glu Arg Gln Gln
        210                     215                     220
Glu Met Glu His Val Tyr Glu Leu Leu Glu Asn Lys Met Gln Leu Leu
225                     230                     235                 240
Gln Glu Glu Ser Arg Leu Ala Lys Asn Glu Ala Ala Arg Met Ala Ala
                245                     250                     255
Leu Val Glu Ala Glu Lys Glu Cys Asn Leu Glu Leu Ser Glu Lys Leu
            260                     265                     270
Lys Gly Val Thr Lys Asn Trp Glu Asp Val Pro Gly Asp Gln Val Lys
        275                     280                     285
Pro Asp Gln Tyr Thr Glu Ala Leu Ala Gln Arg Asp Lys
        290                     295                     300 301
```

```
<210> 1368
<211> 308
<212>Amino acid
```

```
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(308)
<223> X = any amino acid or stop code
```

```
<400> 1368
Thr Arg Arg Arg Gly Thr Thr Trp Arg Ser Pro Arg Pro Arg Arg Ala
1               5               10              15
Ser Thr Ser Arg Pro Ser Thr Arg Pro Arg Gly Val Ala Ser Trp Pro
            20              25              30
Trp Glu Thr Ala Gly Thr Ala Thr Thr Gly Pro Gly Pro Ser Ala Arg
        35              40              45
Thr Arg Arg Arg Ala Ala Arg Arg Arg Ser Arg Pro Arg Arg Arg
    50              55              60
Ala His Gly Gly Leu Ser Gln Pro Ala Gly Trp Gln Ser Leu Leu Ser
65              70              75              80
Phe Thr Ile Leu Phe Leu Ala Trp Leu Ala Gly Phe Ser Ser Arg Leu
                85              90              95
Phe Ala Val Ile Arg Phe Glu Ser Ile Ile His Glu Phe Asp Pro Trp
            100             105             110
Phe Asn Tyr Arg Ser Thr His His Leu Ala Ser His Gly Phe Tyr Glu
        115             120             125
Phe Leu Asn Trp Phe Asp Glu Arg Ala Trp Tyr Pro Leu Gly Arg Ile
        130             135             140
Val Gly Gly Thr Val Tyr Pro Gly Leu Met Ile Thr Ala Gly Leu Ile
145             150             155             160
His Trp Ile Leu Asn Thr Leu Asn Ile Thr Val His Ile Arg Asp Val
                165             170             175
Cys Val Phe Leu Ala Pro Thr Phe Ser Gly Leu Thr Ser Ile Ser Thr
        180             185             190
Phe Leu Leu Thr Arg Glu Leu Trp Asn Gln Gly Ala Gly Leu Leu Ala
        195             200             205
Ala Cys Phe Ile Ala Ile Val Pro Gly Tyr Ile Ser Arg Ser Val Ala
    210             215             220
Gly Ser Phe Asp Asn Glu Gly Ile Ala Ile Phe Ala Leu Gln Phe Thr
225             230             235             240
Tyr Tyr Leu Trp Val Lys Ser Val Lys Thr Gly Ser Val Phe Trp Thr
            245             250             255
Met Cys Cys Cys Leu Ser Tyr Phe Tyr Met Val Ser Ala Trp Gly Gly
        260             265             270
Tyr Val Phe Ile Ile Asn Leu Ile Pro Leu His Ala Phe Val Leu Val
    275             280             285
Leu Met Gln Arg Tyr Ser Lys Arg Val Tyr Ile Xaa Tyr Ser Thr Phe
290             295             300
Tyr Ile Val Gly
305         308
```

```
<210> 1369
<211> 212
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1369
```

```
Arg Arg Leu Ile Val Val Leu Ser Asp Ala Phe Leu Ser Arg Ala Trp
 1               5                  10                  15
Cys Ser His Ser Phe Arg Val Gly Pro Ala Arg Gly Trp Val Gly Pro
            20                  25                  30
Ser Val Ala Pro Thr Pro Leu Thr Val Pro Pro Arg Arg Glu Gly Leu
            35                  40                  45
Cys Arg Leu Leu Glu Leu Thr Arg Arg Pro Ile Phe Ile Thr Phe Glu
    50                  55                  60
Gly Gln Arg Arg Asp Pro Ala His Pro Ala Leu Arg Leu Leu Arg Gln
65                  70                  75                  80
His Arg His Leu Val Thr Leu Leu Leu Trp Arg Pro Gly Ser Val Thr
                85                  90                  95
Pro Ser Ser Asp Phe Trp Lys Glu Val Gln Leu Ala Leu Pro Arg Lys
            100                 105                 110
Val Arg Tyr Arg Pro Val Glu Gly Asp Pro Gln Thr Gln Leu Gln Asp
    115                 120                 125
Asp Lys Asp Pro Met Leu Ile Leu Arg Gly Arg Val Pro Glu Gly Arg
    130                 135                 140
Ala Leu Asp Ser Glu Val Asp Pro Asp Pro Glu Gly Asp Leu Gly Val
145                 150                 155                 160
Arg Gly Pro Val Phe Gly Glu Pro Ser Ala Pro Pro His Thr Ser Gly
                165                 170                 175
Val Ser Leu Gly Glu Ser Arg Ser Ser Glu Val Asp Val Ser Asp Leu
            180                 185                 190
Gly Ser Arg Asn Tyr Ser Ala Arg Thr Asp Phe Tyr Cys Leu Val Ser
        195                 200                 205
Lys Asp Asp Met
210         212
```

```
<210> 1370
<211> 281
<212> Amino acid
<213> Homo sapiens
```

`<400> 1370`

```
Leu Ser His Glu Gly Trp Arg Arg Gly Arg Glu Gly Glu Arg Ile Asn
 1               5                  10                  15
Ser Ser Val Ala Ser Leu Ala Pro Leu Cys Ile Leu Pro Asp Leu Pro
            20                  25                  30
Ser Asn Met His Leu Ala Arg Leu Val Gly Ser Cys Ser Leu Leu Leu
            35                  40                  45
Leu Leu Gly Ala Leu Ser Gly Trp Ala Ala Ser Asp Asp Pro Ile Glu
    50                  55                  60
Lys Val Ile Glu Gly Ile Asn Arg Gly Leu Ser Asn Ala Glu Arg Glu
65                  70                  75                  80
Val Gly Lys Ala Leu Asp Gly Ile Asn Ser Gly Ile Thr His Ala Gly
                85                  90                  95
Arg Glu Val Glu Lys Val Phe Asn Gly Leu Ser Asn Met Gly Ser His
            100                 105                 110
Thr Gly Lys Glu Leu Asp Lys Gly Val Gln Gly Leu Asn His Gly Met
    115                 120                 125
Asp Lys Val Ala His Glu Ile Asn His Gly Ile Gly Gln Ala Gly Lys
    130                 135                 140
Glu Ala Glu Lys Leu Gly His Gly Val Asn Asn Ala Ala Gly Gln Ala
145                 150                 155                 160
Gly Lys Glu Ala Asp Lys Ala Val Gln Gly Phe His Thr Gly Val His
                165                 170                 175
Gln Ala Gly Lys Glu Ala Glu Lys Leu Gly Gln Gly Val Asn His Ala
            180                 185                 190
```

```
Ala Asp Gln Ala Gly Lys Glu Val Glu Lys Leu Gly Gln Gly Ala His
        195                 200                 205
His Ala Ala Gly Gln Ala Gly Lys Glu Leu Gln Asn Ala His Asn Gly
    210                 215                 220
Val Asn Gln Ala Ser Lys Glu Ala Asn Gln Leu Leu Asn Gly Asn His
225                 230                 235                 240
Gln Ser Gly Ser Ser Ser His Gln Gly Gly Ala Thr Thr Thr Pro Leu
                245                 250                 255
Ala Ser Gly Ala Ser Val Asn Thr Pro Phe Ile Asn Leu Pro Ala Leu
            260                 265                 270
Trp Arg Ser Val Ala Asn Ile Met Pro
        275                 280 281


        <210> 1371
        <211> 119
        <212> Amino acid
        <213> Homo sapiens




        <400> 1371
Ser Ala Ser Gly Gly Leu Gly Met Thr Val Glu Gly Pro Glu Gly Ser
  1             5                 10                  15
Glu Arg Glu His Arg Pro Pro Glu Lys Pro Pro Arg Pro Pro Arg Pro
            20                  25                  30
Leu His Leu Ser Asp Arg Ser Phe Arg Arg Lys Lys Asp Ser Val Glu
        35                  40                  45
Ser His Pro Thr Trp Val Asp Asp Thr Arg Ile Asp Ala Asp Ala Ile
    50                  55                  60
Val Glu Lys Ile Val Gln Ser Gln Asp Phe Thr Asp Gly Ser Asn Thr
65                  70                  75                  80
Glu Asp Ser Asn Leu Arg Leu Phe Val Ser Arg Asp Gly Ser Ala Thr
                85                  90                  95
Leu Ser Gly Ile Gln Leu Ala Thr Arg Val Ser Ser Gly Val Tyr Glu
            100                 105                 110
Pro Val Val Ile Glu Ser His
        115                 119


        <210> 1372
        <211> 108
        <212> Amino acid
        <213> Homo sapiens




        <400> 1372
Glu Arg Ser Gly Trp Pro Gln Pro Glu Gly Thr Val Thr Ala Gln Gly
  1             5                 10                  15
Pro Leu Phe Trp Glu Arg Leu Ser Gly Ala Val Thr Val Ser Ser Gly
            20                  25                  30
Tyr Lys Ala Asp Met Trp Pro Ser Phe Pro Gln Val Arg Val Gly Ser
        35                  40                  45
Phe Leu Phe Gly Ile Leu Phe Phe Ser Phe Gly Ser Ser Ser Leu Pro
    50                  55                  60
Pro Gly Leu Pro Pro Ala Ser Leu Leu Cys Cys Ala Val Gln Trp
65                  70                  75                  80
Gly Ala Arg Ala Leu Phe Leu Pro Cys Leu Lys Glu Arg Ala Leu Gly
                85                  90                  95
```

```
Met Glu Met Arg Asn Asn Thr Leu Ser Phe Arg Gln
            100                 105         108
```

```
<210> 1373
<211> 209
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(209)
<223> X = any amino acid or stop code
```

```
<400> 1373
Ser Ser Ser Asn Leu Arg Leu Ser Phe Leu Ile Asn Glu Asn Ile Leu
 1               5                  10                  15
Gly Lys Cys Phe Arg Ser Gly Pro Ser Cys Ala Gly Pro Arg Ile Ser
            20                  25                  30
Pro Leu Ala Ala Gln Tyr Glu Cys Pro Arg Pro Ser Leu Leu Ile Met
            35                  40                  45
Ala Ser Val Pro Lys Thr Asn Lys Ile Glu Pro Arg Ser Tyr Ser Ile
    50                  55                  60
Ile Pro Ser Cys Gly Ile Arg Arg Leu Gly Pro Ala Leu Asn Thr Leu
 65                 70                  75                  80
Ile Phe Gln Ser Lys Arg Phe Gly Pro Arg Gly His Ser Ala Lys Ser
                85                  90                  95
Ile Glu Gly Ala Pro Arg Gly Lys Gly Arg Gly Arg Ala Val Ala Arg
            100                 105                 110
Leu Ala Ala Asp Arg Pro Pro Ala Pro Lys Ile Gln Leu Arg Ala Phe
            115                 120                 125
Xaa Leu Gln Gln Leu Xaa Tyr Thr Leu Leu Glu Leu Glu Leu Pro Arg
    130                 135                 140
Leu Leu Ala Pro Asp Leu Pro Ser Asn Gly Ser Ser Leu Lys Asp Leu
145                 150                 155                 160
Lys Trp Thr His Ser Asn Tyr Arg Ala Ser Lys Glu Ser Cys Ile Val
                165                 170                 175
Ile Phe Val Thr Thr Ser Pro Gly Arg Glu Trp Val Ile Cys Ala Leu
                180                 185                 190
Ala Ala Phe Leu Gly Cys Gly Ser Leu Ser Gln Ala Pro Ser Pro Glu
            195                 200                 205
Ser
209
```

```
<210> 1374
<211> 153
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1374
Leu Arg Ile Ile Asn Thr Tyr Phe Cys Phe Lys Phe Leu Ile Val Asn
 1               5                  10                  15
Tyr Ile His Gly Thr Thr Lys Ala Arg Lys Pro His Val Leu Gly Glu
            20                  25                  30
Ser Leu Ile Ser Ala Met Ser Arg Gln Glu Pro Lys Met Phe Val Leu
```

```
                35                    40                    45
Leu Tyr Val Thr Ser Phe Ala Ile Cys Ala Ser Gly Gln Pro Arg Gly
    50                    55                    60
Asn Gln Leu Lys Gly Glu Asn Tyr Ser Pro Arg Tyr Ile Cys Ser Ile
65                    70                    75                    80
Pro Gly Leu Pro Gly Pro Pro Gly Pro Pro Gly Ala Asn Gly Ser Pro
                85                    90                    95
Gly Pro His Gly Arg Ile Gly Leu Pro Gly Arg Asp Gly Arg Asp Gly
            100                   105                   110
Arg Lys Gly Glu Lys Gly Glu Lys Gly Thr Ala Gly Leu Arg Gly Lys
        115                   120                   125
Thr Gly Pro Leu Gly Leu Ala Gly Glu Lys Gly Asp Gln Gly Glu Thr
    130                   135                   140
Gly Lys Lys Gly Pro Ile Gly Pro Glu
145                   150           153
```

```
        <210> 1375
        <211> 149
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 1375
Phe Ala Ser Ala Met Leu Gly Ser Arg Val Asp Arg Pro Lys Leu Ser
1                   5                   10                    15
Val Ala Pro Ser Val Val Leu Glu Glu Asp Gln Val Leu Val Ser Pro
                20                    25                    30
Ala Val Asp Leu Glu Ala Gly Cys Arg Leu Arg Asp Phe Thr Glu Lys
            35                    40                    45
Ile Met Asn Val Lys Gly Lys Val Ile Leu Ser Met Leu Val Val Ser
    50                    55                    60
Thr Val Ile Ile Val Phe Trp Glu Phe Ile Asn Ser Thr Glu Gly Ser
65                    70                    75                    80
Phe Leu Trp Ile Tyr His Ser Lys Asn Pro Glu Val Asp Asp Ser Ser
                85                    90                    95
Ala Gln Lys Gly Trp Trp Phe Leu Ser Trp Phe Asn Asn Gly Ile His
            100                   105                   110
Asn Tyr Gln Gln Gly Glu Glu Asp Ile Asp Lys Glu Lys Gly Arg Glu
        115                   120                   125
Glu Thr Lys Gly Arg Lys Met Thr Gln Gln Ser Phe Gly Tyr Gly Thr
    130                   135                   140
Gly Leu Ile Gln Thr
145                   149
```

```
        <210> 1376
        <211> 416
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 1376
Gly Ser His Arg Phe Ser Leu Ala Ser Pro Leu Asp Pro Glu Val Gly
1                   5                   10                    15
Pro Tyr Cys Asp Thr Pro Thr Met Arg Thr Leu Phe Asn Leu Leu Trp
                20                    25                    30
Leu Ala Leu Ala Cys Ser Pro Val His Thr Thr Leu Ser Lys Ser Asp
```

```
              35                    40                    45
Ala Lys Lys Ala Ala Ser Lys Thr Leu Leu Glu Lys Ser Gln Phe Ser
      50                   ·55                   60
Asp Lys Pro Val Gln Asp Arg Gly Leu Val Val Thr Asp Leu Lys Ala
  65  ·                   70                   75                   80
Glu Ser Val Val Leu Glu His Arg Ser Tyr Cys Ser Ala Lys Ala Arg
                  85                   90                   95
Asp Arg His Phe Ala Gly Asp Val Leu Gly Tyr Val Thr Pro Trp Asn
          ·    100                  105                  110
Ser His Gly Tyr Asp Val Thr Lys Val Phe Gly Ser Lys Phe Thr Gln
          115                  120                  125
Ile Ser Pro Val Trp Leu Gln Leu Lys Arg Arg Gly Arg Glu Met Phe
      130                  135                  140
Glu Val Thr Gly Leu His Asp Val Asp Gln Gly Trp Met Arg Ala Val
145           '        150                  ·   155                  160
Arg Lys His Ala Lys Gly Leu His Ile Val Pro Arg Leu Leu Phe Glu
          165                  170                  175
Asp Trp Thr Tyr Asp Asp Phe Arg Asn Val Leu Asp Ser Glu Asp Glu
          180                  185                  190
Ile Glu Glu Leu Ser Lys Thr Val Val Gln Val Ala Lys Asn Gln His
          195                  200                  205
Phe Asp Gly Phe Val Val Glu Val Trp Asn Gln Leu Leu Ser Gln Lys
      210                  215                  220
Arg Val Gly Leu Ile His Met Leu Thr His Leu Ala Glu Ala Leu His
225                  230                  235                  240
Gln Ala Arg Leu Leu Ala Leu Leu Val Ile Pro Pro Ala Ile Thr Pro
              245                  250                  255
Gly Thr Asp Gln Leu Gly Met Phe Thr His Lys Glu Phe Glu Gln Leu
          260                  265                  270 ·
Ala Pro Val Leu Asp Gly Phe Ser Leu Met Thr Tyr Asp Tyr Ser Thr
      · 275                  280                  285
Ala His Gln Pro Gly Pro Asn Ala Pro Leu Ser Trp Val Arg Ala Cys
      290                  295                  300
Val Gln Val Leu Asp Pro Lys Ser Lys Trp Arg Ser Lys Ile Leu Leu
305                  310                  315                  320
Gly Leu Asn Phe Tyr Gly Met Asp Tyr Ala Thr Ser Lys Asp Ala Arg
              325                  330                  335
Glu Pro Val Val Gly Ala Arg Tyr Ile Gln Thr Leu Lys Asp His Arg
          340                  345                  350
Pro Arg Met Val Trp Asp Ser Gln Val Ser Glu His Phe Phe Glu Tyr
      ·355                  360                  365
Lys Lys Ser Arg Ser Gly Arg His Val Val Phe Tyr Pro Thr Leu Lys
      370                  375                  380
Ser Leu Gln Val Arg Leu Glu Leu Ala Arg Glu Leu Gly Val Gly Val
385 ·                390                  395                  400
Ser Ile Trp Glu Leu Gly Gln Gly Leu Asp Tyr Phe Tyr Asp Leu Leu
              405                  410                  415 416
```

```
          <210> 1377
          <211> 316
          <212>Amino acid
          <213> Homo sapiens
```

```
          <400> 1377
Gly Arg Glu Gly Thr Gly Trp Gly Pro Ala Met Ser Glu Val Thr Arg
1                   5                   10                   15
Ser Leu Leu Gln Arg Trp Gly Ala Ser Phe Arg Arg Gly Ala Asp Phe
```

```
                    20                    25                    30
Asp Ser Trp Gly Gln Leu Val Glu Ala Ile Asp Glu Tyr Gln Ile Leu
         35                    40                    45
Ala Arg His Leu Gln Lys Glu Ala Gln Ala Gln His Asn Asn Ser Glu
         50                    55                    60
Phe Thr Glu Glu Gln Lys Lys Thr Ile Gly Lys Ile Ala Thr Cys Leu
65                    70                    75                    80
Glu Leu Arg Ser Ala Ala Leu Gln Ser Thr Gln Ser Gln Glu Glu Phe
             85                    90                    95
Lys Leu Glu Asp Leu Lys Lys Leu Glu Pro Ile Leu Lys Asn Ile Leu
             100                   105                   110
Thr Tyr Asn Lys Glu Phe Pro Phe Asp Val Gln Pro Val Pro Leu Arg
         115                   120                   125
Arg Ile Leu Ala Pro Gly Glu Glu Glu Asn Leu Glu Phe Glu Glu Asp
     130                   135                   140
Glu Glu Glu Gly Gly Ala Gly Ala Gly Ser Pro Asp Ser Phe Pro Ala
145                   150                   155                   160
Arg Val Pro Gly Thr Leu Leu Pro Arg Leu Pro Ser Glu Pro Gly Met
             165                   170                   175
Thr Leu Leu Thr Ile Arg Ile Glu Lys Ile Gly Leu Lys Asp Ala Gly
             180                   185                   190
Gln Cys Ile Asn Pro Tyr Ile Thr Val Ser Val Lys Asp Leu Asn Gly
         195                   200                   205
Ile Asp Leu Thr Pro Val Gln Asp Thr Pro Val Ala Ser Arg Lys Glu
     210                   215                   220
Asp Thr Tyr Val His Phe Asn Val Asp Ile Glu Leu Gln Lys His Val
225                   230                   235                   240
Glu Lys Leu Thr Lys Gly Ala Ala Ile Phe Phe Glu Phe Lys His Tyr
             245                   250                   255
Lys Pro Lys Lys Arg Phe Thr Ser Thr Lys Cys Phe Ala Phe Met Glu
             260                   265                   270
Met Asp Glu Ile Lys Leu Gly Pro Ile Val Ile Glu Leu Tyr Lys Lys
             275                   280                   285
Pro Thr Asp Phe Lys Arg Lys Gln Leu Gln Leu Leu Thr Lys Lys Pro
     290                   295                   300
Leu Tyr Leu His Leu His Gln Thr Leu His Lys Glu
305                   310                   315 316


        <210> 1378
        <211> 90
        <212>Amino acid
        <213> Homo sapiens




        <400> 1378
Gly Ser Ile Thr Ser Glu Pro Ser Leu Asp Ser Leu Gln Pro Leu Pro
 1               5                   10                    15
Pro Gly Phe Lys Arg Phe Ser Cys Leu Ser Leu Pro Ser Ser Trp Asp
             20                    25                    30
Tyr Arg Arg Pro Pro Pro Gly Leu Ala Tyr Phe Cys Ile Phe Ser Arg
         35                    40                    45
Asp Glu Val Ser Pro Cys Trp Pro Gly Cys Ser Pro Ser Pro Asp Leu
     50                    55                    60
Met Ile Arg Leu Pro Arg Pro Pro Ser Val Gly Ile Thr Gly Val Ser
65                    70                    75                    80
His Arg Ala Trp Pro Thr Ile Asp Asn Phe
             85                    90


        <210> 1379
```

<210> 332
<212>Amino acid
<213> Homo sapiens

<400> 1379
Lys Met Pro Val Pro Trp Phe Leu Leu Ser Leu Ala Leu Gly Arg Ser
1   5   10   15
Pro Val Val Leu Ser Leu Glu Arg Leu Val Gly Pro Gln Asp Ala Thr
            20   25   30
His Cys Ser Pro Gly Leu Ser Cys Arg Leu Trp Asp Ser Asp Ile Leu
        35   40   45
Cys Leu Pro Gly Asp Ile Val Pro Ala Pro Gly Pro Val Leu Ala Pro
    50   55   60
Thr His Leu Gln Thr Glu Leu Val Leu Arg Cys Gln Lys Glu Thr Asp
65   70   75   80
Cys Asp Leu Cys Leu Arg Val Ala Val His Leu Ala Val His Gly His
            85   90   95
Trp Glu Glu Pro Glu Asp Glu Glu Lys Phe Gly Gly Ala Ala Asp Ser
        100   105   110
Gly Val Glu Glu Pro Arg Asn Ala Ser Leu Gln Ala Gln Val Val Leu
        115   120   125
Ser Phe Gln Ala Tyr Pro Thr Ala Arg Cys Val Leu Leu Glu Val Gln
    130   135   140
Val Pro Ala Ala Leu Val Gln Phe Gly Gln Ser Val Gly Ser Val Val
145   150   155   160
Tyr Asp Cys Phe Glu Ala Ala Leu Gly Ser Glu Val Arg Ile Trp Ser
                165   170   175
Tyr Thr Gln Pro Arg Tyr Glu Lys Glu Leu Asn His Thr Gln Gln Leu
            180   185   190
Pro Asp Cys Arg Gly Leu Glu Val Trp Asn Ser Ile Pro Ser Cys Trp
        195   200   205
Ala Leu Pro Trp Leu Asn Val Ser Ala Asp Gly Asp Asn Val His Leu
    210   215   220
Val Leu Asn Val Ser Glu Glu Gln His Phe Gly Leu Ser Leu Tyr Trp
225   230   235   240
Asn Gln Val Gln Gly Pro Pro Lys Pro Arg Trp His Lys Asn Leu Val
                245   250   255
Arg Pro Pro Pro Ser Gln Val His Ser His Cys Arg Pro Cys Leu Cys
                260   265   270
Lys Asp Ala Val Pro Tyr Gln Arg Gly Ser Leu Lys Arg Thr His Pro
        275   280   285
Lys Gln Gly Lys Ile Gly Gly Gly Thr Ser Ala Phe Leu Val Ser Leu
    290   295   300
Thr Leu Ala Ser Ser Ser Ser Leu Ser Ser Pro Thr Ser Phe Leu
305   310   315   320
Tyr Leu Phe His Arg Leu Asp Arg Arg Ser Leu Pro
                325   330   332

<210> 1380
<211> 117
<212>Amino acid
<213> Homo sapiens

<400> 1380
Leu Arg Leu Trp Asn Arg Asn Gln Met Met His Asn Ile Ile Val Lys

```
 1                    5                    10                   15
Glu Leu Ile Val Thr Phe Phe Leu Gly Ile Thr Val Val Gln Met Leu
                20                   25                   30
Ile Ser Val Thr Gly Leu Lys Gly Val Glu Ala Gln Asn Gly Ser Glu
            35                   40                   45
Ser Glu Val Phe Val Gly Lys Tyr Glu Thr Leu Val Phe Tyr Trp Pro
    50                   55                   60
Ser Leu Leu Cys Leu Ala Phe Leu Leu Gly Arg Phe Leu His Met Phe
65                   70                   75                   80
Val Lys Ala Leu Arg Val His Leu Gly Trp Glu Leu Gln Val Glu Glu
                85                   90                   95
Lys Ser Val Leu Glu Val His Gln Gly Glu His Val Lys Gln Leu Leu
            100                  105                  110
Arg Ile Pro Arg Pro
        115     117
```

```
<210> 1381
<211> 216
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1381
Lys Val Asn Arg Lys Leu Arg Lys Lys Gly Lys Ile Ser His Asp Lys
 1                    5                    10                   15
Arg Lys Lys Ser Arg Ser Lys Ala Ile Gly Ser Asp Thr Ser Asp Ile
                20                   25                   30
Val His Ile Trp Cys Pro Glu Gly Met Lys Thr Ser Asp Ile Lys Glu
            35                   40                   45
Leu Asn Ile Val Leu Pro Glu Phe Glu Lys Thr His Leu Glu His Gln
    50                   55                   60
Gln Arg Ile Glu Ser Lys Val Cys Lys Ala Ala Ile Ala Thr Phe Tyr
65                   70                   75                   80
Val Asn Val Lys Glu Gln Phe Ile Lys Met Leu Lys Glu Ser Gln Met
                85                   90                   95
Leu Thr Asn Leu Lys Arg Lys Asn Ala Lys Met Ile Ser Asp Ile Glu
            100                  105                  110
Lys Lys Arg Gln Arg Met Ile Glu Val Gln Asp Glu Leu Leu Arg Leu
        115                  120                  125
Glu Pro Gln Leu Lys Gln Leu Gln Thr Lys Tyr Asp Glu Leu Lys Glu
    130                  135                  140
Arg Lys Ser Ser Leu Arg Asn Ala Ala Tyr Phe Leu Ser Asn Leu Lys
145                  150                  155                  160
Gln Leu Tyr Gln Asp Tyr Ser Asp Val Gln Ala Gln Glu Pro Asn Val
                165                  170                  175
Lys Glu Thr Tyr Asp Ser Ser Ser Leu Pro Ala Leu Leu Phe Lys Ala
            180                  185                  190
Arg Thr Leu Leu Gly Ala Glu Ser His Leu Arg Asn Ile Asn His Gln
        195                  200                  205
Leu Glu Lys Leu Leu Asp Gln Gly
    210                  215 216
```

```
<210> 1382
<211> 137
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
```

```
<222> (1)...(137)
<223> X = any amino acid or stop code



    <400> 1382
Val Trp Val Ala Met Glu Glu Pro Pro Val Arg Glu Glu Glu Xaa Glu
 1               5                  10                  15
Glu Gly Glu Glu Asp Glu Glu Arg Asp Glu Val Gly Pro Glu Gly Ala
                20                  25                  30
Leu Gly Lys Ser Pro Phe Gln Leu Thr Ala Glu Asp Val Tyr Asp Ile
        35                  40                  45
Ser Tyr Leu Leu Gly Arg Glu Leu Met Ala Leu Gly Ser Asp Pro Arg
    50                  55                  60
Val Thr Gln Leu Gln Phe Lys Val Val Arg Val Leu Glu Met Leu Glu
65                  70                  75                  80
Ala Leu Val Asn Glu Gly Ser Leu Ala Leu Glu Glu Leu Lys Met Glu
                85                  90                  95
Arg Asp His Leu Arg Lys Glu Val Glu Gly Leu Arg Arg Gln Ser Pro
                100                 105                 110
Pro Ala Ser Gly Glu Trp Pro Asp Ser Thr Lys Arg Arg Pro Arg Arg
        115                 120                 125
Lys Lys Arg Lys Arg Cys Cys Gly Tyr
130                 135     137



    <210> 1383
    <211> 90
    <212>Amino acid
    <213> Homo sapiens




    <400> 1383
Pro Arg Asn Asp His Arg Leu Thr Gln Ser Arg Arg Asp Ser Ser Ser
 1               5                  10                  15
Lys Thr Arg Ala Phe Leu Val Pro Arg Phe Leu Pro Ala His Ala Gly
                20                  25                  30
Val Thr Ser Glu Glu Arg Thr Ala Met Lys Arg Glu Gly Gly Ala Ala
        35                  40                  45
His Leu Cys Ser Asp Ser Leu Pro Glu Ser Gln Gln Gln Asp Gly Asn
    50                  55                  60
His Ala Pro Asn Phe Ser Ser His Gly Ser Cys Arg Arg Arg Gln Arg
65                  70                  75                  80
Arg Arg His Asp Lys Ala Leu His Ala Arg
                85                  90




    <210> 1384
    <211> 166
    <212>Amino acid
    <213> Homo sapiens




    <400> 1384
Thr His Ala Ser Glu Lys Ser Arg Ala Thr Met Ser Ser Trp Ser Arg
 1               5                  10                  15
```

```
Gln Arg Pro Lys Ser Pro Gly Gly Ile Gln Pro His Val Ser Arg Thr
            20                  25                  30
Leu Phe Leu Leu Leu Leu Leu Ala Ala Ser Ala Trp Gly Val Thr Leu
            35                  40                  45
Ser Pro Lys Asp Cys Gln Val Phe Arg Ser Asp His Gly Ser Ser Ile
            50                  55                  60
Ser Cys Gln Pro Pro Ala Glu Ile Pro Gly Tyr Leu Pro Ala Asp Thr
65                  70                  75                  80
Val His Leu Ala Val Glu Phe Phe Asn Leu Thr His Leu Pro Ala Asn
            85                  90                  95
Leu Leu Gln Gly Ala Ser Lys Leu Gln Glu Leu His Leu Ser Ser Asn
            100                 105                 110
Gly Leu Glu Ser Leu Ser Pro Glu Phe Leu Arg Pro Val Pro Gln Leu
            115                 120                 125
Arg Val Leu Asp Leu Thr Arg Asn Ala Leu Thr Gly Leu Pro Pro Gly
    130                 135                 140
Leu Phe Gln Ala Ser Ala Thr Leu Asp Thr Leu Val Leu Lys Glu Asn
145                 150                 155                 160
Gln Leu Glu Val Leu Glu
                165 166
```

```
<210> 1385
<211> 164
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1385
Glu Arg Pro Arg Ile Met Asp Leu Ala Gly Leu Leu Lys Ser Gln Phe
1               5                   10                  15
Leu Cys His Leu Val Phe Cys Tyr Val Phe Ile Ala Ser Gly Leu Ile
            20                  25                  30
Ile Asn Thr Ile Gln Leu Phe Thr Leu Leu Leu Trp Pro Ile Asn Lys
            35                  40                  45
Gln Leu Phe Arg Lys Ile Asn Cys Arg Leu Ser Tyr Cys Ile Ser Ser
    50                  55                  60
Gln Leu Val Met Leu Leu Glu Trp Trp Ser Gly Thr Glu Cys Thr Ile
65                  70                  75                  80
Phe Thr Asp Pro Arg Ala Tyr Leu Lys Tyr Gly Lys Glu Asn Ala Ile
                85                  90                  95
Val Val Leu Asn His Lys Phe Glu Ile Asp Phe Leu Cys Gly Trp Ser
            100                 105                 110
Leu Ser Glu Arg Phe Gly Leu Leu Gly Val Ser Gln Lys Cys Ile Pro
    115                 120                 125
Pro Cys Leu Thr His Phe Phe Gly Ser Ala Pro Pro Leu Val Phe Leu
    130                 135                 140
Leu Leu Val Ile Gln Asn Leu Gln Lys Asn Gln Gln Ser Phe Tyr Leu
145                 150                 155                 160
Met Lys Trp Ser
            164
```

```
<210> 1386
<211> 289
<212>Amino acid
<213> Homo sapiens
```

<400> 1386
Met Ile Val Phe Gly Trp Ala Val Phe Leu Ala Ser Arg Ser Leu Gly
1   5   10   15
Gln Gly Leu Leu Leu Thr Leu Glu Glu His Ile Ala His Phe Leu Gly
            20   25   30
Thr Gly Gly Ala Ala Thr Thr Met Gly Asn Ser Cys Ile Cys Arg Asp
        35   40   45
Asp Ser Gly Thr Asp Asp Ser Val Asp Thr Gln Gln Gln Gln Ala Glu
    50   55   . 60
Asn Ser Ala Val Pro Thr Ala Asp Thr Arg Ser Gln Pro Arg Asp Pro
65   70   75   80
Val Arg Pro Pro Arg Arg Gly Arg Gly Pro His Glu Pro Arg Arg Lys
                85   90   95
Lys Gln Asn Val Asp Gly Leu Val Leu Asp Thr Leu Ala Val Ile Arg
            100   105   110
Thr Leu Val Asp Asn Asp Gln Glu Pro Pro Tyr Ser Met Ile Thr Leu
            115   120   125
His Glu Met Ala Glu Thr Asp Glu Gly Trp Leu Asp Val Val Gln Ser
    130   135   140
Leu Ile Arg Val Ile Pro Leu Glu Asp Pro Leu Gly Pro Ala Val Ile
145   150   155   160
Thr Leu Leu Leu Asp Glu Cys Pro Leu Pro Thr Lys Asp Ala Leu Gln
                165   170   175
Lys Leu Thr Glu Ile Leu Asn Leu Asn Gly Glu Val Ala Cys Gln Asp
            180   185   190
Ser Ser His Pro Ala Lys His Arg Asn Thr Ser Ala Val Leu Gly Cys
            195   200   205
Leu Ala Glu Lys Leu Ala Gly Pro Ala Ser Ile Gly Leu Leu Ser Pro
    210   215   220
Gly Ile Leu Glu Tyr Leu Leu Gln Cys Leu Leu Gln Ser His Pro Thr
225   230   235   240
Val Met Leu Phe Ala Leu Ile Ala Leu Glu Lys Phe Ala Gln Thr Ser
                245   250   255
Glu Asn Lys Leu Thr Ile Ser Glu Ser Ser Ile Ser Asp Arg Leu Val
            260   265   270
Thr Leu Glu Ser Trp Ala Asn Asp Pro Asp Tyr Leu Lys Arg Gln Val
    275   280   285
Gly
289

<210> 1387
<211> 320
<212>Amino acid
<213> Homo sapiens

<400> 1387
Arg Phe Gly Thr Arg Gly Leu Ala Lys Ser Lys Gly Val Val Leu Met
1   5   10   15
Ala Leu Cys Ala Leu Thr Arg Ala Leu Arg Ser Leu Asn Leu Ala Pro
            20   25   30
Pro Thr Val Ala Ala Pro Ala Pro Ser Leu Phe Pro Ala Ala Gln Met
        35   40   45
Met Asn Asn Gly Leu Leu Gln Gln Pro Ser Ala Leu Met Leu Leu Pro
    50   55   60
Cys Arg Pro Val Leu Thr Ser Val Ala Leu Asn Ala Asn Phe Val Ser
65   70   75   80
Trp Lys Ser Arg Thr Lys Tyr Thr Ile Thr Pro Val Lys Met Arg Lys
                85   90   95

864

```
Ser Gly Gly Arg Asp His Thr Gly Arg Ile Arg Val His Gly Ile Gly
            100                 105                 110
Gly Gly His Lys Gln Arg Tyr Arg Met Ile Asp Phe Leu Arg Phe Arg
            115                 120                 125
Pro Glu Glu Thr Lys Ser Gly Pro Phe Glu Glu Lys Val Ile Gln Val
            130                 135                 140
Arg Tyr Asp Pro Cys Arg Ser Ala Asp Ile Ala Leu Val Ala Gly Gly
145                 150                 155                 160
Ser Arg Lys Arg Trp Ile Ile Ala Thr Glu Asn Met Gln Ala Gly Asp
                165                 170                 175
Thr Ile Leu Asn Ser Asn His Ile Gly Arg Met Ala Val Ala Ala Arg
            180                 185                 190
Glu Gly Asp Ala His Pro Leu Gly Ala Leu Pro Val Gly Thr Leu Ile
            195                 200                 205
Asn Asn Val Glu Ser Glu Pro Gly Arg Gly Ala Gln Tyr Ile Arg Ala
            210                 215                 220
Ala Gly Thr Cys Gly Val Leu Leu Arg Lys Val Asn Gly Thr Ala Ile
225                 230                 235                 240
Ile Gln Leu Pro Ser Lys Arg Gln Met Gln Val Leu Glu Thr Cys Val
                245                 250                 255
Ala Thr Val Gly Arg Val Ser Asn Val Asp His Asn Lys Arg Val Ile
            260                 265                 270
Gly Lys Ala Gly Arg Asn Arg Trp Leu Gly Lys Arg Pro Asn Ser Gly
            275                 280                 285
Arg Trp His Arg Lys Gly Gly Trp Ala Gly Arg Lys Ile Arg Pro Leu
    290                 295                 300
Pro Pro Met Lys Ser Tyr Val Lys Leu Pro Ser Ala Ser Ala Gln Ser
305                 310                 315                 320
```

```
<210> 1388
<211> 140
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1388
Pro Val Gln Gly Ala Arg Cys Trp Leu Asp Ala Arg Arg Asn Val Arg
1               5               10                  15
Val Phe Ser Gly Val Cys Cys Gly Cys Gly Ile His Gly Tyr Trp Ala
            20                  25                  30
Glu Pro Cys Gly Gly Cys Gly Ala Met Glu Gly Leu Arg Ser Ser Val
            35                  40                  45
Glu Leu Asp Pro Glu Leu Thr Pro Gly Lys Leu Asp Glu Glu Met Val
            50                  55                  60
Gly Leu Pro Pro His Asp Ala Ser Pro Gln Val Thr Phe His Ser Leu
65                  70                  75                  80
Asp Gly Lys Thr Val Val Cys Pro His Phe Met Gly Leu Leu Leu Gly
                85                  90                  95
Leu Leu Leu Leu Leu Thr Leu Ser Val Arg Asn Gln Leu Cys Val Arg
            100                 105                 110
Gly Glu Arg Gln Leu Ala Glu Thr Leu His Ser Gln Val Lys Glu Lys
            115                 120                 125
Ser Gln Leu Ile Gly Lys Lys Thr Asp Cys Arg Asp
            130                 135                 140
```

```
<210> 1389
<211> 448
```

<212>Amino acid
<213> Homo sapiens

<400> 1389
Gly Ala Arg Gly Arg Pro Leu Ala Glu Thr Trp Pro Phe Leu Thr Ala
1   5   10   15
Pro Val Leu Pro Gly Gln Leu Gln Ile Thr Glu Pro Thr Met Ala Glu
            20   25   30
Lys Gly Asp Cys Ile Ala Ser Val Tyr Gly Tyr Asp Leu Gly Gly Arg
        35   40   45
Phe Val Asp Phe Gln Pro Leu Gly Phe Gly Val Asn Gly Leu Val Leu
    50   55   60
Ser Ala Val Asp Ser Arg Ala Cys Arg Lys Val Ala Val Lys Lys Ile
65   70   75   80
Ala Leu Ser Asp Ala Arg Ser Met Lys His Ala Leu Arg Glu Ile Lys
                85   90   95
Ile Ile Arg Arg Leu Asp His Asp Asn Ile Val Lys Val Tyr Glu Val
            100   105   110
Leu Gly Pro Lys Gly Thr Asp Leu Gln Gly Glu Leu Phe Lys Phe Ser
        115   120   125
Val Ala Tyr Ile Val Gln Glu Tyr Met Glu Thr Asp Leu Ala Arg Leu
    130   135   140
Leu Glu Gln Gly Thr Leu Ala Glu Glu His Ala Lys Leu Phe Met Tyr
145   150   155   160
Gln Leu Leu Arg Gly Leu Lys Tyr Ile His Ser Ala Asn Val Leu His
                165   170   175
Arg Asp Leu Lys Pro Ala Asn Ile Phe Ile Ser Thr Glu Asp Leu Val
            180   185   190
Leu Lys Ile Gly Asp Phe Gly Leu Ala Arg Ile Val Asp Gln His Tyr
        195   200   205
Ser His Lys Gly Tyr Leu Ser Glu Gly Leu Val Thr Lys Trp Tyr Arg
    210   215   220
Ser Pro Arg Leu Leu Leu Ser Pro Asn Asn Tyr Thr Lys Ala Ile Asp
225   230   235   240
Met Trp Ala Ala Gly Cys Ile Leu Ala Glu Met Leu Thr Gly Arg Met
                245   250   255
Leu Phe Ala Gly Ala His Glu Leu Glu Gln Met Gln Leu Ile Leu Glu
            260   265   270
Thr Ile Pro Val Ile Arg Glu Glu Asp Lys Asp Glu Leu Leu Arg Val
        275   280   285
Met Pro Ser Phe Val Ser Ser Thr Trp Glu Val Lys Arg Pro Leu Arg
    290   295   300
Lys Leu Leu Pro Glu Val Asn Ser Glu Ala Ile Asp Phe Leu Glu Lys
305   310   315   320
Ile Leu Thr Phe Asn Pro Met Asp Arg Leu Thr Ala Glu Met Gly Leu
                325   330   335
Gln His Pro Tyr Met Ser Pro Tyr Ser Cys Pro Glu Asp Glu Pro Thr
            340   345   350
Ser Gln His Pro Phe Arg Ile Glu Asp Glu Ile Asp Asp Ile Val Leu
        355   360   365
Met Ala Ala Asn Gln Ser Gln Leu Ser Asn Trp Asp Thr Cys Ser Ser
    370   375   380
Arg Tyr Pro Val Ser Leu Ser Ser Asp Leu Glu Trp Arg Pro Asp Arg
385   390   395   400
Cys Gln Asp Ala Ser Glu Val Gln Arg Asp Pro Arg Ala Gly Ser Ala
            405   410   415
Pro Leu Ala Glu Asn Val Gln Val Asp Pro Arg Lys Asp Ser His Ser
            420   425   430
Ser Ser Ala Ser Cys Gln Ala Gly Arg Asn Gly Val Ser Arg Tyr Gln
        435   440   445   448

866

```
<210> 1390
<211> 815
<212> Amino acid
<213> Homo sapiens


<400> 1390
Met Arg Thr Leu Gly Thr Cys Leu Ala Thr Leu Ala Gly Leu Leu Leu
1               5                   10                  15
Thr Ala Ala Gly Glu Thr Phe Ser Gly Gly Cys Leu Phe Asp Glu Pro
            20                  25                  30
Tyr Ser Thr Cys Gly Tyr Ser Gln Ser Glu Gly Asp Asp Phe Asn Trp
        35                  40                  45
Glu Gln Val Asn Thr Leu Thr Lys Pro Thr Ser Asp Pro Trp Met Pro
    50                  55                  60
Ser Gly Ser Phe Met Leu Val Asn Ala Ser Gly Arg Pro Glu Gly Gln
65                  70                  75                  80
Arg Ala His Leu Leu Leu Pro Gln Leu Lys Glu Asn Asp Thr His Cys
                85                  90                  95
Ile Asp Phe His Tyr Phe Val Ser Ser Lys Ser Asn Ser Pro Pro Gly
            100                 105                 110
Leu Leu Asn Val Tyr Val Lys Val Asn Asn Gly Pro Leu Gly Asn Pro
        115                 120                 125
Ile Trp Asn Ile Ser Gly Asp Pro Thr Arg Thr Trp Asn Arg Ala Glu
    130                 135                 140
Leu Ala Ile Ser Thr Phe Trp Pro Asn Phe Tyr Gln Val Ile Phe Glu
145                 150                 155                 160
Val Ile Thr Ser Gly His Gln Gly Tyr Leu Ala Ile Asp Glu Val Lys
            165                 170                 175
Val Leu Gly His Pro Cys Thr Arg Thr Pro His Phe Leu Arg Ile Gln
        180                 185                 190
Asn Val Glu Val Asn Ala Gly Gln Phe Ala Thr Phe Gln Cys Ser Ala
    195                 200                 205
Ile Gly Arg Thr Val Ala Gly Asp Arg Leu Trp Leu Gln Gly Ile Asp
210                 215                 220
Val Arg Asp Ala Pro Leu Lys Glu Ile Lys Val Thr Ser Ser Arg Arg
225                 230                 235                 240
Phe Ile Ala Ser Phe Asn Val Val Asn Thr Thr Lys Arg Asp Ala Gly
            245                 250                 255
Lys Tyr Arg Cys Met Ile Arg Thr Glu Gly Gly Val Gly Ile Ser Asn
        260                 265                 270
Tyr Ala Glu Leu Val Val Lys Glu Pro Pro Val Pro Ile Ala Pro Pro
    275                 280                 285
Gln Leu Ala Ser Val Gly Ala Thr Tyr Leu Trp Ile Gln Leu Asn Ala
    290                 295                 300
Asn Ser Ile Asn Gly Asp Gly Pro Ile Val Ala Arg Glu Val Glu Tyr
305                 310                 315                 320
Cys Thr Ala Ser Gly Ser Trp Asn Asp Arg Gln Pro Val Asp Ser Thr
            325                 330                 335
Ser Tyr Lys Ile Gly His Leu Asp Pro Asp Thr Glu Tyr Glu Ile Ser
        340                 345                 350
Val Leu Leu Thr Arg Pro Gly Glu Gly Gly Thr Gly Ser Pro Gly Pro
        355                 360                 365
Ala Leu Arg Thr Arg Thr Lys Cys Ala Asp Pro Met Arg Gly Pro Arg
    370                 375                 380
Lys Leu Glu Val Val Glu Val Lys Ser Arg Gln Ile Thr Ile Arg Trp
385                 390                 395                 400
```

```
Glu Pro Phe Gly Tyr Asn Val Thr Arg Cys His Ser Tyr Asn Leu Thr
            405               410               415
Val His Tyr Cys Tyr Gln Val Gly Gly Gln Glu Gln Val Arg Glu Glu
            420               425               430
Val Ser Trp Asp Thr Glu Asn Ser His Pro Gln His Thr Ile Thr Asn
            435               440               445
Leu Ser Pro Tyr Thr Asn Val Ser Val Lys Leu Ile Leu Met Asn Pro
    450               455               460
Glu Gly Arg Lys Glu Ser Gln Glu Leu Ile Val Gln Thr Asp Glu Asp
465               470               475               480
Leu Pro Gly Ala Val Pro Thr Glu Ser Ile Gln Gly Ser Thr Phe Glu
            485               490               495
Glu Lys Ile Phe Leu Gln Trp Arg Glu Pro Thr Gln Thr Tyr Gly Val
            500               505               510
Ile Thr Leu Tyr Glu Ile Thr Tyr Lys Ala Val Ser Ser Phe Asp Pro
            515               520               525
Glu Ile Asp Leu Ser Asn Gln Ser Gly Arg Val Ser Lys Leu Gly Asn
    530               535               540
Glu Thr His Phe Leu Phe Phe Gly Leu Tyr Pro Gly Thr Thr Tyr Ser
545               550               555               560
Phe Thr Ile Arg Ala Ser Thr Ala Lys Gly Phe Gly Pro Pro Ala Thr
            565               570               575
Asn Gln Phe Thr Thr Lys Ile Ser Ala Pro Ser Met Pro Ala Tyr Glu
            580               585               590
Leu Glu Thr Pro Leu Asn Gln Thr Asp Asn Thr Val Thr Val Met Leu
            595               600               605
Lys Pro Ala His Ser Arg Gly Ala Pro Val Ser Val Tyr Gln Ile Val
    610               615               620
Val Glu Glu Glu Arg Pro Arg Arg Thr Lys Lys Thr Thr Glu Ile Leu
625               630               635               640
Lys Cys Tyr Pro Val Pro Ile His Phe Gln Asn Ala Ser Leu Leu Asn
            645               650               655
Ser Gln Tyr Tyr Phe Ala Ala Glu Phe Pro Ala Asp Ser Leu Gln Ala
            660               665               670
Ala Gln Pro Phe Thr Ile Gly Asp Asn Lys Thr Tyr Asn Gly Tyr Trp
    675               680               685
Asn Thr Pro Leu Leu Pro Tyr Lys Ser Tyr Arg Ile Tyr Phe Gln Ala
    690               695               700
Ala Ser Arg Ala Asn Gly Glu Thr Lys Ile Asp Cys Val Gln Val Ala
705               710               715               720
Thr Lys Gly Ala Ala Thr Pro Lys Pro Val Pro Glu Pro Glu Lys Gln
            725               730               735
Thr Asp His Thr Val Lys Ile Ala Gly Val Ile Ala Gly Ile Leu Leu
            740               745               750
Phe Val Ile Ile Phe Leu Gly Val Val Leu Val Met Lys Lys Arg Leu
    755               760               765
Tyr Lys His Gly Ala Ser Ile Cys Ser Ala Ser Gly Glu Ala Ser Gly
    770               775               780
Ser Phe Gln Ser Trp Arg Lys Ala Lys His Lys Gln Ala Cys Pro Met
785               790               795               800
Ala Arg Ala Gly Ala Arg Glu Arg Ala Gly Gly Cys Leu Lys Leu
            805               810               815
```

        <210> 1391
        <211> 142
        <212>Amino acid
        <213> Homo sapiens

        <400> 1391

```
Gly Ile Arg Gln Leu Leu Gln Leu Ser Arg Ala Ser Met Ala Ala Arg
1               5                   10                      15
Lys Ser Trp Thr Ala Leu Arg Leu Cys Ala Thr Val Val Val Leu Asp
            20                  25                  30
Met Val Val Cys Lys Gly Phe Val Gln Asp Leu Asp Glu Ser Phe Lys
        35                  40                  45
Glu Asn Arg Asn Asp Asp Ile Trp Leu Val His Phe Tyr Ala Pro Trp
    50                  55                  60
Cys Gly His Cys Lys Lys Leu Glu Pro Ile Trp Asn Glu Ala Gly Leu
65                  70                  75                      80
Glu Met Lys Ser Ile Gly Ser Pro Val Lys Ala Gly Lys Met Asp Ala
            85                  90                  95
Thr Ser Tyr Ser Ser Ile Ala Ser Glu Phe Gly Val Arg Gly Tyr Pro
            100                 105                 110
Thr Ile Lys Leu Ala Leu Ile Arg Pro Leu Pro Ser Gln Gln Met Phe
        115                 120                 125
Glu His Met His Lys Arg His Arg Val Phe Phe Val Tyr Val
    130                 135                 140     142
```

```
<210> 1392
<211> 282
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1392
Gly Leu Val Ile Val Ile Ser His Phe Ser Pro Ser Pro Gly Leu Leu
1               5                   10                      15
Pro Ala Thr Gln Ser Pro Ala Met Ser Asp Pro Ile Thr Leu Asn Val
            20                  25                  30
Gly Gly Lys Leu Tyr Thr Thr Ser Leu Ala Thr Leu Thr Ser Phe Pro
            35                  40                  45
Asp Ser Met Leu Gly Ala Met Phe Ser Gly Lys Met Pro Thr Lys Arg
    50                  55                  60
Asp Ser Gln Gly Asn Cys Phe Ile Asp Arg Asp Gly Lys Val Phe Arg
65                  70                  75                      80
Tyr Ile Leu Asn Phe Leu Arg Thr Ser His Leu Asp Leu Pro Glu Asp
                85                  90                  95
Phe Gln Glu Met Gly Leu Leu Arg Arg Glu Ala Asp Phe Tyr Gln Val
            100                 105                 110
Gln Pro Leu Ile Glu Ala Leu Gln Glu Lys Glu Val Glu Leu Ser Lys
        115                 120                 125
Ala Glu Lys Asn Ala Met Leu Asn Ile Thr Leu Asn Gln Arg Val Gln
    130                 135                 140
Thr Val His Phe Thr Val Arg Glu Ala Pro Gln Ile Tyr Ser Leu Ser
145                 150                 155                 160
Ser Ser Ser Met Glu Val Phe Asn Ala Asn Ile Phe Ser Thr Ser Cys
            165                 170                 175
Leu Phe Leu Lys Leu Leu Gly Ser Lys Leu Phe Tyr Cys Ser Asn Gly
            180                 185                 190
Asn Leu Ser Ser Ile Thr Ser His Leu Gln Asp Pro Asn His Leu Thr
    195                 200                 205
Leu Asp Trp Val Ala Asn Val Glu Gly Leu Pro Glu Glu Glu Tyr Thr
    210                 215                 220
Lys Gln Asn Leu Lys Arg Leu Trp Val Val Pro Ala Asn Lys Gln Ile
225                 230                 235                 240
Asn Ser Phe Gln Val Phe Val Glu Glu Val Leu Lys Ile Ala Leu Ser
            245                 250                 255
Asp Gly Phe Cys Ile Asp Ser Ser His Pro His Ala Leu Asp Phe Met
        260                 265                 270
```

```
        <210> 1393
        <211> 308
        <212>Amino acid
        <213> Homo sapiens




        <400> 1393
Ser Cys Ala Asp Asn Leu Val Ala Ala Ser Gly Gly Cys Trp Phe Val
 1               5                  10                  15
Leu Gly Glu Arg Arg Ala Gly Ser Leu Leu Ser Ala Ser Tyr Gly Thr
                20                  25                  30
Phe Ala Met Pro Gly Met Val Leu Phe Gly Arg Arg Trp Ala Ile Ala
            35                  40                  45
Ser Asp Asp Leu Val Phe Pro Gly Phe Phe Glu Leu Val Val Arg Val
    50                  55                  60
Leu Trp Trp Ile Gly Ile Leu Thr Leu Tyr Leu Met His Arg Gly Lys
65                  70                  75                  80
Leu Asp Cys Ala Gly Gly Ala Leu Leu Ser Ser Tyr Leu Ile Val Leu
                85                  90                  95
Met Ile Leu Leu Ala Val Val Ile Cys Thr Val Ser Ala Ile Met Cys
            100                 105                 110
Val Ser Met Arg Gly Thr Ile Cys Asn Pro Gly Pro Arg Lys Ser Met
        115                 120                 125
Ser Lys Leu Leu Tyr Ile Arg Leu Ala Leu Phe Phe Pro Glu Met Val
    130                 135                 140
Trp Ala Ser Leu Gly Ala Ala Trp Val Ala Asp Gly Val Gln Cys Asp
145                 150                 155                 160
Arg Thr Val Val Asn Gly Ile Ile Ala Thr Val Val Val Ser Trp Ile
                165                 170                 175
Ile Ile Ala Ala Thr Val Val Ser Ile Ile Ile Val Phe Asp Pro Leu
            180                 185                 190
Gly Gly Lys Met Ala Pro Tyr Ser Ser Ala Gly Pro Ser His Leu Asp
        195                 200                 205
Ser His Asp Ser Ser Gln Leu Leu Asn Gly Leu Lys Thr Ala Ala Thr
    210                 215                 220
Ser Val Trp Glu Thr Arg Ile Lys Leu Leu Cys Cys Cys Ile Gly Lys
225                 230                 235                 240
Asp Asp His Thr Arg Val Ala Phe Ser Ser Thr Ala Glu Leu Phe Ser
                245                 250                 255
Thr Tyr Phe Ser Asp Thr Asp Leu Val Pro Ser Asp Ile Ala Ala Gly
            260                 265                 270
Leu Ala Leu Leu His Gln Gln Gln Asp Asn Ile Arg Asn Asn Gln Asp
        275                 280                 285
Leu Pro Arg Trp Ser Ala Met Pro Gln Gly Ala Pro Arg Lys Leu Ile
    290                 295                 300
Trp Met Gln Asn
305             308


        <210> 1394
        <211> 238
        <212>Amino acid
        <213> Homo sapiens
```

870

```
        <400> 1394
Phe Arg Ala Ala Thr Ala Ala Ala Lys Gly Asn Gly Gly Gly Gly
 1               5                   10                  15
Arg Ala Gly Ala Gly Asp Ala Ser Gly Thr Arg Lys Lys Lys Gly Pro
            20                  25                  30
Gly Pro Leu Ala Thr Ala Tyr Leu Val Ile Tyr Asn Val Val Met Thr
        35                  40                  45
Ala Gly Trp Leu Val Ile Ala Val Gly Leu Val Arg Ala Tyr Leu Ala
    50                  55                  60
Lys Gly Ser Tyr His Ser Leu Tyr Tyr Ser Ile Glu Lys Pro Leu Lys
65                  70                  75                  80
Phe Phe Gln Thr Gly Ala Leu Leu Glu Ile Leu His Cys Ala Ile Gly
                85                  90                  95
Ile Val Pro Ser Ser Val Val Leu Thr Ser Phe Gln Val Met Ser Arg
            100                 105                 110
Val Phe Leu Ile Trp Ala Val Thr His Ser Val Lys Glu Val Gln Ser
        115                 120                 125
Glu Asp Ser Val Leu Phe Val Ile Ala Trp Thr Ile Thr Glu Ile Ile
    130                 135                 140
Arg Tyr Ser Phe Tyr Thr Phe Ser Leu Leu Asn His Leu Pro Tyr Leu
145                 150                 155                 160
Ile Lys Arg Ala Arg Tyr Thr Leu Phe Ile Val Leu Tyr Pro Met Gly
                165                 170                 175
Val Ser Gly Glu Leu Leu Thr Ile Tyr Ala Ala Leu Pro Phe Val Arg
            180                 185                 190
Gln Ala Gly Leu Tyr Ser Ile Ser Leu Pro Asn Ser Thr Lys Lys Ile
            195                 200                 205
Phe Leu Ile Ser Gln Val Trp Trp His Met Leu Ala Val Ser Ala Asp
    210                 215                 220
Ala Lys Ala Ala Glu Met Pro Ala Val Leu Lys Pro Gly Pro
225                 230                 235     238
```

```
        <210> 1395
        <211> 231
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 1395
Met Leu Thr Gly Val Gly Cys Leu Val Ser Ser Glu Ser Leu Ser Cys
 1               5                   10                  15
Val Gln Cys Asn Ser Trp Glu Lys Ser Cys Val Asn Ser Ile Ala Ser
            20                  25                  30
Glu Cys Pro Ser His Ala Asn Thr Ser Cys Ile Ser Ser Ser Ala Ser
        35                  40                  45
Ser Ser Leu Glu Thr Pro Val Arg Leu Tyr Gln Asn Met Phe Cys Ser
    50                  55                  60
Ala Glu Asn Cys Ser Glu Glu Thr His Ile Thr Ala Phe Thr Val His
65                  70                  75                  80
Val Ser Ala Glu Glu His Phe His Phe Val Ser Gln Cys Cys Glu Gly
                85                  90                  95
Lys Glu Cys Ser Asn Thr Ser Asp Ala Leu Asp Pro Pro Leu Lys Asn
            100                 105                 110
Val Ser Ser Asn Ala Glu Cys Pro Ala Cys Tyr Glu Ser Asn Gly Thr
        115                 120                 125
Ser Cys Arg Gly Lys Pro Trp Lys Cys Tyr Glu Glu Glu Gln Cys Val
        130                 135                 140
Phe Leu Val Ala Glu Leu Lys Asn Asp Ile Glu Ser Lys Ser Leu Val
145                 150                 155                 160
```

```
Leu Lys Gly Cys Ser Asn Val Ser Asn Ala Thr Cys Gln Phe Leu Ser
             165                     170                 175
Gly Glu Asn Lys Thr Leu Gly Gly Val Ile Phe Arg Lys Phe Glu Cys
         180                     185                 190
Ala Asn Val Asn Ser Leu Thr Pro Thr Ser Ala Pro Thr Thr Ser His
       195                     200                 205
Asn Val Gly Ser Lys Ala Ser Leu Tyr Leu Leu Ala Leu Ala Ser Leu
     210                     215                 220
Leu Leu Arg Gly Leu Leu Pro
225                 230 231
```

```
<210> 1396
<211> 216
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1396
Val Pro Ala Arg Arg Arg Ala Met Glu Ile Gly Thr Glu Ile Ser Arg
  1           5                   10                  15
Lys Ile Arg Ser Ala Ile Lys Gly Lys Leu Gln Glu Leu Gly Ala Tyr
             20                  25                  30
Val Asp Glu Glu Leu Pro Asp Tyr Ile Met Val Met Val Ala Asn Lys
         35                  40                  45
Lys Ser Gln Asp Gln Met Thr Glu Asp Leu Ser Leu Phe Leu Gly Asn
     50                  55                  60
Asn Thr Ile Arg Phe Thr Val Trp Leu His Gly Val Leu Asp Lys Leu
65                  70                  75                  80
Arg Ser Val Thr Thr Glu Pro Ser Ser Leu Lys Ser Ser Asp Thr Asn
                 85                  90                  95
Ile Phe Asp Ser Asn Val Pro Ser Asn Lys Ser Asn Phe Ser Arg Gly
             100                 105                 110
Asp Glu Arg Arg His Glu Ala Ala Val Pro Pro Leu Ala Ile Pro Ser
         115                 120                 125
Ala Arg Pro Glu Lys Arg Asp Ser Arg Val Ser Thr Ser Ser Gln Glu
     130                 135                 140
Ser Lys Thr Thr Asn Val Arg Gln Thr Tyr Asp Asp Gly Ala Ala Thr
145                 150                 155                 160
Arg Leu Met Ser Thr Val Lys Pro Leu Arg Glu Pro Ala Pro Ser Glu
                 165                 170                 175
Asp Val Ile Asp Ile Lys Pro Glu Pro Asp Asp Leu Ile Asp Glu Asp
             180                 185                 190
Leu Asn Phe Val Gln Glu Lys Pro Leu Ser Gln Lys Lys Pro Thr Val
         195                 200                 205
Thr Leu Thr Tyr Gly Ser Ser Arg
     210                 215 216
```

```
<210> 1397
<211> 135
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1397
Ala Ser Arg Val Leu Ala Ala Val Met Gly Leu Pro Trp Gly Gln Pro
  1           5                   10                  15
```

```
His Leu Gly Leu Gln Met Leu Leu Leu Ala Leu Asn Trp Leu Arg Pro
            20                  25                  30
Ser Leu Ser Leu Glu Leu Val Pro Tyr Thr Pro Gln Ile Thr Ala Trp
            35                  40                  45
Asp Leu Glu Gly Lys Val Thr Ala Thr Thr Phe Ser Leu Glu Gln Pro
    50                  55                  60
Arg Cys Val Phe Asp Gly Leu Ala Ser Ala Ser Asp Thr Val Trp Leu
65                  70                  75                      80
Val Val Ala Phe Ser Asn Ala Ser Arg Gly Phe Gln Asn Pro Glu Thr
                85                  90                  95
Leu Ala Asp Ile Pro Ala Ser Pro Gln Leu Leu Thr Asp Gly His Tyr
            100                 105                 110
Met Thr Leu Pro Leu Ser Pro Asp Gln Leu Pro Cys Gly Asp Pro Met
        115                 120                 125
Ala Gly Ser Gly Ser Ala Pro
    130                 135
```

```
<210> 1398
<211> 41
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1398
Asn Ser Leu Asn Asn Phe Phe Phe Glu Thr Glu Ser Cys Cys Val Ala
1               5                   10                  15
Gln Ala Gly Val Gln Trp Arg Asp Leu Gly Ser Leu Gln Ala Pro Pro
            20                  25                  30
Pro Gly Phe Lys Arg Phe Ser Cys Leu
        35                  40  41
```

```
<210> 1399
<211> 151
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1399
Lys Ser Leu Pro Leu Gln Lys His Pro Lys Pro Ser Cys Gln Glu Asp
1               5                   10                  15
Gln Gly Leu Gly Arg Gly Ser Leu Ser Gly His Ser Pro Leu Thr Leu
            20                  25                  30
Leu Thr Phe Leu Thr Ser Cys Ala Leu Gly Asp Gln Gln Leu Leu Pro
        35                  40                  45
Pro Arg Thr Ser Gly Ser Leu Cys Gln Glu Ser Met Ser Glu Gln Ser
    50                  55                  60
Cys Gln Met Ser Glu Leu Arg Leu Leu Leu Gly Lys Cys Arg Ser
65                  70                  75                  80
Gly Lys Ser Ala Thr Gly Asn Ala Ile Leu Gly Lys His Val Phe Lys
                85                  90                  95
Ser Lys Phe Ser Asp Gln Thr Val Ile Lys Met Cys Gln Arg Glu Ser
            100                 105                 110
Trp Val Leu Arg Glu Arg Lys Val Val Ile Asp Thr Pro Asp Leu
        115                 120                 125
Phe Ser Ser Ile Ala Cys Ala Glu Asp Lys Gln Arg Asn Ile Gln His
    130                 135                 140
```

```
Leu Leu Glu Leu Ser Ala Pro
145                 150 151
```

```
<210> 1400
<211> 324
<212>Amino acid
<213> Homo sapiens
```

```
·<400> 1400
Phe Val Glu Thr Thr Val Ser Val Gln Ser Ala Glu Ser Ser Asp Ala
 1               5                10                15
Leu Ser Trp Ser Arg Leu Pro Arg Ala Leu Ala Ser Val Gly Pro Glu
            20                25                30
Glu Ala Arg Ser Gly Ala Pro Val Gly Gly Gly Arg Trp Gln Leu Ser
        35                40                45
Asp Arg Val Glu Gly Gly Ser Pro Thr Leu Gly Leu Leu Gly Gly Ser
    50                55                60
Pro Ser Ala Gln Pro Gly Thr Gly Asn Val Glu Ala Gly Ile Pro Ser
65              70                75                80
Gly Arg Met Leu Glu Pro Leu Pro Cys Trp Asp Ala Ala Lys Asp Leu
            85                90                95
Lys Glu Pro Gln Cys Pro Pro Gly Asp Arg Val Gly Val Gln Pro Gly
            100               105               110
Asn Ser Arg Val Trp Gln Gly Thr Met Glu Lys Ala Gly Leu Ala Trp
        115               120               125
Thr Arg Gly Thr Gly Val Gln Ser Glu Gly Thr Trp Glu Ser Gln Arg
    130               135               140
Gln Asp Ser Asp Ala Leu Pro Ser Pro Glu Leu Leu Pro Gln Asp Gln
145               150               155               160
Asp Lys Pro Phe Leu Arg Lys Ala Cys Ser Pro Ser Asn Ile Pro Ala
            165               170               175
Val Ile Ile Thr Asp Met Gly Thr Gln Glu Asp Gly Ala Leu Glu Glu
            180               185               190
Thr Gln Gly Ser Pro Arg Gly Asn Leu Pro Leu Arg Lys Leu Ser Ser
    195               200               205
Ser Ser Ala Ser Ser Thr Gly Phe Ser Ser Ser Tyr Glu Asp Ser Glu
210               215               220
Glu Asp Ile Ser Ser Asp Pro Glu Arg Thr Leu Asp Pro Asn Ser Ala
225               230               235               240
Phe Leu His Thr Leu Asp Gln Gln Lys Pro Arg Val Val Glu Ser Arg
            245               250               255
Ser Val Thr Gln Ala Gly Val Gln Trp His Asp Ile Gly Ser Leu Gln
    260               265               270
Pro Leu Pro Pro Trp Ile Gln Ala Ile Leu His Ala Ser Ala Phe Arg
    275               280               285
Ile Ala Gly Thr Thr Gly Ala Cys His His Ala Arg Ile Ile Phe Gly
    290               295               300
Phe Leu Val Glu Arg Gly Phe His His Val Gly Gln Asp Gly Leu Tyr
305               310               315               320
Leu Leu Ile Leu
        324
```

```
<210> 1401
<211> 76
<212>Amino acid
<213> Homo sapiens
```

```
<220>
```

<221> misc_feature
<222> (1)...(76)
<223> X = any amino acid or stop code

<400> 1401
Lys Ile Cys Ser Ser Tyr Phe Leu Arg Ile Ile Cys Ile Leu Gln Lys
1   5   10   15
Glu Ala Gln Glu Ala Ser Asn Leu Tyr Thr Ser Cys Asp Phe Phe Ser
            20   25   30
Pro Ala Phe Tyr Phe Val Ile Tyr Arg Leu Tyr Asn Phe Lys Ile His
            35   40   45
Trp Pro Gly Ala Val Ala His Thr Tyr Ser Pro Ser Thr Leu Gly Gly
        50   55   60
Arg Gly Arg Trp Val Thr Xaa Gly Arg Glu Phe Met
65   70   75 76

<210> 1402
<211> 102
<212> Amino acid
<213> Homo sapiens

<400> 1402
Leu Ile Leu Ser Leu Pro Leu Leu Tyr Gly His Leu Lys Ser Tyr Thr
1   5   10   15
Phe Pro Ser Glu His Tyr Leu His Leu Leu Gln Thr Phe Ala Thr Phe
            20   25   30
Asn Lys Tyr Leu Asn Val Cys Val Leu Ile Phe Ile His His Lys Pro
            35   40   45
Val Val Pro Ala Ile Gln Gly Thr Asn Val Gly Gly Ser Leu Glu Pro
        50   55   60
Arg Arg Leu Arg Leu Gln Gln Ala Met Ile Val Pro Leu His Phe Gly
65   70   75   80
Leu Gly Asn Arg Val Arg Pro Cys Leu Lys Lys Gln Gln Gln Gln Gln
                85   90   95
Gln Gln Gln Gln Lys Lys
            100   102

<210> 1403
<211> 124
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(124)
<223> X = any amino acid or stop code

<400> 1403
Arg Met Glu Thr Lys Pro Val Ile Thr Cys Leu Lys Thr Leu Leu Ile
1   5   10   15

```
Ile Tyr Ser Phe Val Phe Trp Ile Thr Gly Val Ile Leu Leu Ala Ala
            20              25                  30
Gly Val Trp Gly Lys Leu Thr Leu Gly Ser Tyr Ile Ser Leu Ile Ala
        35              40                  45
Glu Asn Ser Thr Tyr Ala Pro Tyr Val Leu Ile Val Thr Gly Thr Thr
    50              55                  60
Ile Val Ala Tyr Pro Leu Val Xaa Phe Phe Phe Ser Tyr Ser Ser Gly
65              70                  75                      80
Phe Ser Tyr Ile Leu Ala Val Arg Leu Ile Ala Gly Ile Ala Leu Val
            85                  90                  95
Tyr Asn Tyr Ile Pro Arg Ser Ser Ser Arg Ala Leu Val Arg Leu Val
            100                 105                 110
Val Leu Leu Arg Phe Leu Leu Ser Arg His Pro Ser
        115                 120         124
```

```
<210> 1404
<211> 136
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(136)
<223> X = any amino acid or stop code
```

```
<400> 1404
Asn Ala Glu His Pro Gly Met Asp Arg His Asp Leu Cys Gln Lys Ala
1               5               10                  15
Lys Leu Ala Glu His Ala Glu Arg Asp Asp Asp Met Ala Ala Cys Met
            20              25                  30
Lys Thr Val Thr Asp Gln Gly Ala Glu Leu Ser Asn Glu Glu Arg Asn
        35                  40                  45
Leu Leu Ser Asp Ala His Thr Asn Ala Val Xaa Ala Arg Arg Ser Ser
    50                  55                  60
Trp Met Gly Ala Xaa Arg Ile Glu Gln Lys Thr Glu Gly Ala Asp Thr
65              70                  75                      80
Gln Gln Gln Met Ala Pro Asp Cys Arg Glu Ile Phe Ala Thr Glu Leu
            85                  90                  95
Arg Asp Ile Cys Asp Asp Val Leu Ser Leu Leu Glu Lys Leu Leu Ile
            100                 105                 110
Pro Asn Ala Ser His Ala Xaa Ser Leu Val Tyr Tyr Leu His Met Ile
        115                 120                 125
Gly Asp Tyr Tyr Arg Tyr Trp Leu
130                 135 136
```

```
<210> 1405
<211> 110
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(110)
<223> X = any amino acid or stop code
```

MISSING AT THE TIME OF PUBLICATION

```
Gly Asn Asp Tyr Ser Leu Gly Leu Thr Pro Thr Gly Val Leu Val Phe
              85                    90                    95
Glu Gly Asp Thr Lys Ile Gly Leu Phe Phe Trp Pro Lys Ile Thr Arg
              100                   105                   110
Leu Asp Phe Lys Lys Asn Lys Leu Thr Leu Val Val Val Glu Asp Asp
              115                   120                   125
Asp Gln Gly Lys Glu Gln Glu His Thr Phe Val Phe Arg Leu Asp His
        130                   135                   140
Pro Lys Ala Cys Lys His Leu Trp Lys Cys Ala Val Glu His His Ala
145                   150                   155                   160
Phe Phe Arg Leu Arg Gly Pro Val Gln Lys Ser Ser His Arg Ser Gly
              165                   170                   175
Phe Ile Arg Leu Gly Ser Arg Phe Arg Tyr Ser Gly Lys Thr Glu Tyr
              180                   185                   190
Gln Thr Thr Lys Thr Asn Lys Ala Arg Arg Ser Thr Ser Phe Glu Arg
        195                   200                   205
Arg Pro Ser Lys Arg Tyr Ser Arg Arg Thr Leu Gln Met Lys Ala Cys
210                   215                   220
Ala Thr Lys Pro Glu Glu Leu Ser Val His Asn Asn Val Ser Thr Gln
225                   230                   235                   240
Ser Asn Gly Ser Gln Gln Ala Trp Gly Met Arg Ser Ala Leu Pro Val
              245                   250                   255
Ser Pro Ser Ile Ser Ser Ala Pro Val Pro Val Glu Ile Glu Asn Leu
              260                   265                   270
Pro Gln Ser Pro Gly Thr Asp Gln His Asp Arg Lys Trp Leu Ser Ala
              275                   280                   285
Ala Ser Asp Cys Cys Gln Arg Gly Gly Asn Gln Trp Asn Thr Arg Ala
        290                   295                   300
Leu
305
```

```
<210> 1408
<211> 92
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(92)
<223> X = any amino acid or stop code
```

```
<400> 1408
Ala Thr Ala Pro Gly Leu Phe Asn Phe Phe Xaa Phe Leu Phe Gln Cys
1             5                   10                    15
Arg Glu Glu His Lys Lys Lys Asn Pro Glu Val Pro Val Asn Phe Ala
              20                  25                    30
Glu Phe Ser Lys Lys Cys Ser Gly Arg Trp Lys Thr Met Ser Ser Lys
        35                  40                    45
Glu Lys Phe Lys Phe Gly Glu Met Ala Lys Ala Asp Glu Val Cys Tyr
    50                  55                    60
Asp Arg Glu Met Lys Asp Tyr Gly Pro Ala Lys Gly Gly Lys Lys Lys
65                  70                    75                    80
Asp Pro Asn Ala Pro Lys Arg Pro Pro Ser Gly Phe
              85                  90        92
```

```
<210> 1409
<211> 169
<212>Amino acid
```

878

```
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(169)
<223> X = any amino acid or stop code




<400> 1409
Ala Glu Gly Leu Gly Ser Trp Ala Val Trp Ala Gly Leu Gly Trp Ala
 1               5                  10                  15
Gly Arg His Met Glu Ala Gly Gly Ala Thr Gly Ala Leu Gly Val Gly
            20                  25                  30
Ser Lys Leu Pro Ser Ala Phe Cys Phe Pro Gly Ser Ser Val Ala Met
            35                  40                  45
Asp Met Phe Gln Lys Val Glu Lys Ile Gly Glu Gly Thr Tyr Gly Val
        50                  55                  60
Val Tyr Lys Ala Lys Asn Arg Glu Thr Gly Gln Leu Val Ala Leu Lys
 65                  70                  75                  80
Lys Ile Arg Leu Asp Leu Xaa Val Leu Gly Arg Pro Leu Ser Tyr Pro
                85                  90                  95
Pro Trp Ala Ile Thr Thr Trp Ala Leu Pro Asp Pro Phe Pro Leu Ser
                100                 105                 110
Trp Ser Pro Arg Leu Thr Pro Leu Gly Ala Ala Gln Gln Pro Leu Pro
            115                 120                 125
Val Leu Ser Pro Val His Cys Leu Leu Thr Ser Leu Cys Arg Gly Pro
        130                 135                 140
Asp Cys Gly Val Trp Trp Met Thr Cys Gln Gly Ala Gln Val Ser Ile
145                 150                 155                 160
Ala Gly Ala Leu Val Ile Leu Trp Gly
                165                 169




<210> 1410
<211> 146
<212> Amino acid
<213> Homo sapiens




<400> 1410
Leu Cys Val Ser Val Leu Cys Ser Phe Ser Tyr Leu Gln Asn Gly Trp
 1               5                  10                  15
Thr Ala Ser Asp Pro Val His Gly Tyr Trp Phe Arg Ala Gly Asp His
            20                  25                  30
Val Ser Arg Asn Ile Pro Val Ala Thr Asn Asn Pro Val Arg Ala Val
            35                  40                  45
Gln Glu Glu Thr Arg Asp Arg Phe His Leu Leu Gly Asp Pro Gln Asn
        50                  55                  60
Lys Asp Cys Thr Leu Ser Ile Arg Asp Thr Arg Glu Ser Asp Ala Gly
 65                  70                  75                  80
Thr Tyr Val Phe Cys Val Glu Arg Gly Asn Met Lys Trp Asn Tyr Lys
                85                  90                  95
Tyr Asp Gln Leu Ser Val Asn Val Thr Ala Ser Gln Asp Leu Leu Ser
                100                 105                 110
Arg Tyr Arg Leu Glu Val Pro Glu Ser Val Thr Val Gln Glu Gly Leu
            115                 120                 125
Cys Val Ser Val Pro Trp Gln Cys Pro Leu Pro Pro Leu Gln Leu Asp
        130                 135                 140
```

Cys Leu
145 146

        <210> 1411
        <211> 250
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(250)
        <223> X = any amino acid or stop code

        <400> 1411
Gln Leu Gln Leu Cys Gln Asn Cys Thr Lys Arg Gly Glu Cys His Cys
 1   5   10   15
Val Pro Phe Asp Thr Tyr Ile Lys Thr Lys Lys Glu Lys Lys Arg Leu
            20   25   30
Ser Val Leu Pro Pro Thr Arg Leu Met Glu Ala Arg Phe Ser Pro Ile
        35   40   45
Asn Gln Ile Leu Pro Trp Cys Arg Gln Asp Leu Ala Ile Ser Ile Ser
    50   55   60
Lys Ala Ile Asn Thr Gln Glu Ala Pro Val Lys Glu Lys His Ala Arg
65   70   75   80
Arg Ile Ile Leu Gly Thr His His Glu Lys Gly Ala Phe Thr Phe Trp
            85   90   95
Ser Tyr Ala Ile Gly Leu Pro Leu Pro Ser Ser Ser Ile Leu Ser Trp
        100   105   110
Lys Phe Cys His Val Leu His Lys Val Leu Arg Asp Gly His Pro Asn
        115   120   125
Val Leu His Asp Cys Gln Arg Tyr Arg Ser Asn Ile Arg Glu Ile Gly
        130   135   140
Asp Leu Trp Gly His Leu His Asp Arg Tyr Gly Gln Leu Val Asn Val
145   150   155   160
Tyr Thr Lys Leu Leu Leu Thr Lys Ile Ser Phe His Leu Lys His Pro
            165   170   175
Gln Phe Pro Ala Gly Leu Glu Val Thr Asp Glu Val Leu Glu Lys Ala
            180   185   190
Ala Gly Thr Asp Val Asn Asn Met Xaa Val Thr Leu His Gly Tyr Met
        195   200   205
Ala Ser Ser Pro Arg Leu Pro His Ser Phe Leu Pro Arg Leu Thr Pro
210   215   220
Arg Arg Pro His Gly Ala Val Gly Leu Asn Glu Ser Val Ala Leu Leu
225   230   235   240
Val Asp Ala His Ala Pro Arg Asp Arg Gly
            245   250

        <210> 1412
        <211> 169
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(169)
        <223> X = any amino acid or stop code

```
    <400> 1412
Ala Ala Pro His Arg Met Pro Arg Ala Pro His Phe Met Pro Leu Leu
 1               5                  10                  15
Leu Leu Leu Leu Leu Leu Ser Leu Pro His Thr Gln Ala Ala Phe Pro
            20                  25                  30
Gln Asp Pro Leu Pro Leu Leu Ile Ser Asp Leu Gln Gly Thr Ser Pro
        35                  40                  45
Leu Ser Trp Leu Pro Ser Leu Glu Asp Asp Ala Val Ala Ala Xaa Leu
    50                  55                  60
Gly Leu Asp Phe Gln Arg Phe Leu Thr Leu Asn Arg Thr Leu Leu Val
65              70                  75                  80
Ala Ala Arg Asp His Val Phe Ser Phe Asp Leu Gln Ala Glu Glu Glu
            85                  90                  95
Gly Glu Gly Leu Val Pro Asn Lys Tyr Leu Thr Trp Arg Ser Gln Asp
            100             105             110
Val Glu Asn Cys Ala Val Arg Xaa Lys Leu Thr Leu Asn Arg Thr Leu
        115             120             125
Leu Val Ala Ala Arg Asp His Val Phe Ser Phe Asp Leu Gln Ala Glu
        130             135             140
Glu Glu Gly Glu Gly Leu Val Pro Asn Lys Tyr Leu Thr Trp Arg Ser
145             150             155             160
Gln Asp Val Glu Asn Cys Ala Val Arg
                165             169


    <210> 1413
    <211> 131
    <212>Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(131)
    <223> X = any amino acid or stop code



    <400> 1413
His Leu Val Pro Lys Thr Arg Gly Arg Gly Thr Pro Ser Gly Asp Gln
 1               5                  10                  15
Ser Pro Val Leu Thr Leu Thr Pro Xaa Gly Asp Pro Pro Thr Ile Leu
            20                  25                  30
Gly Pro Gln Thr Asn Gln Pro Lys Glu His Leu Thr Asn Phe Lys Ser
        35                  40                  45
Gly Lys Arg Ser Phe His Ser Leu Leu Gln Pro Leu Leu Leu Leu Leu
    50                  55                  60
His Pro Ser Ile Ser Pro Phe Leu Asn Phe Gly Ser Phe Pro Phe Leu
65              70                  75                  80
Val Glu Thr Glu Glu Thr Cys Phe Ile His Lys Leu Lys Thr Pro Ala
            85                  90                  95
Leu Val Thr Pro Asp Ser Leu Pro Leu Val Phe Asn His Cys Gly Asp
            100             105             110
Ala Cys Leu Ile Ile His Pro His Phe Arg Asp Val Glu Phe His His
        115             120             125
Thr Gly Asn
130 131


    <210> 1414
```

<211> 365
<212>Amino acid
<213> Homo sapiens

<400> 1414
Cys Cys Ser Thr Lys Asn Ile Ser Gly Asp Lys Ala Cys Asn Leu Met
1   5   10   15
Ile Phe Asp Thr Arg Lys Thr Ala Arg Gln Pro Asn Cys Tyr Leu Phe
            20   25   30
Phe Cys Pro Asn Glu Glu Ala Cys Pro Leu Lys Pro Ala Lys Gly Leu
        35   40   45
Met Ser Tyr Arg Ile Ile Thr Asp Phe Pro Ser Leu Thr Arg Asn Leu
    50   55   60
Pro Ser Gln Glu Leu Pro Gln Glu Asp Ser Leu Leu His Gly Gln Phe
65   70   75   80
Ser Gln Ala Val Thr Pro Leu Ala His His His Thr Asp Tyr Ser Lys
                85   ,   90   95
Pro Thr Asp Ile Ser Trp Arg Asp Thr Leu Ser Gln Lys Phe Gly Ser
            100   105   110
Ser Asp His Leu Glu Lys Leu Phe Lys Met Asp Glu Ala Ser Ala Gln
        115   120   125
Leu Leu Ala Tyr Lys Glu Lys Gly His Ser Gln Ser Ser Gln Phe Ser
    130   135   140
Ser Asp Gln Glu Ile Ala His Leu Leu Pro Glu Asn Val Ser Ala Leu
145   150   155   160
Pro Ala Thr Val Ala Val Ala Ser Pro His Thr Thr Ser Ala Thr Pro
            165   170   175
Lys Pro Ala Thr Leu Leu Pro Thr Asn Ala Ser Val Thr Pro Ser Gly
        180   185   190
Thr Ser Gln Pro Gln Leu Ala Thr Thr Ala Pro Pro Val Thr Thr Val
        195   200   205
Thr Ser Gln Pro Pro Thr Thr Leu Ile Ser Thr Val Phe Thr Arg Ala
    210   215   220
Ala Ala Thr Leu Gln Ala Met Ala Thr Thr Ala Val Leu Thr Thr Thr
225   230   235   240
Phe Gln Ala Pro Thr Asp Ser Lys Gly Ser Leu Glu Thr Ile Pro Phe
            245   250   255
Thr Glu Ile Ser Asn Leu Thr Leu Asn Thr Gly Asn Val Tyr Asn Pro
            260   265   270
Thr Ala Leu Ser Met Ser Asn Val Glu Ser Ser Thr Met Asn Lys Thr
    275   280   285
Ala Ser Trp Glu Gly Arg Glu Ala Ser Pro Gly Ser Ser Ser Gln Gly
    290   295   300
Ser Val Pro Glu Asn Gln Tyr Gly Leu Pro Phe Glu Lys Trp Leu Leu
305   310   315   320
Ile Gly Ser Leu Leu Phe Gly Val Leu Phe Leu Val Ile Gly Leu Val
            325   330   335
Leu Leu Gly Arg Ile Leu Ser Glu Ser Leu Arg Arg Lys Arg Tyr Ser
            340   345   350
Arg Leu Asp Tyr Leu Ile Asn Gly Ile Tyr Val Asp Ile
            355   360   365

<210> 1415
<211> 148
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature

<222> (1)...(148)
<223> X = any amino acid or stop code

<400> 1415

```
Ile Phe Ala Gly Ser Gly Val Met Arg Leu Lys Ile Ser Leu Leu Lys
1                5                   10                  15
Glu Pro Lys His Gln Glu Leu Val Ser Cys Val Gly Trp Thr Thr Ala
            20                  25                  30
Glu Glu Leu Tyr Ser Cys Ser Asp Asp His His Ile Val Lys Trp Asn
        35                  40                  45
Leu Leu Thr Ser Glu Thr Thr Gln Ile Val Lys Leu Pro Asp Asp Ile
    50                  55                  60
Tyr Pro Ile Asp Phe His Trp Phe Pro Lys Ser Leu Gly Val Lys Lys
65              70                  75                  80
Gln Thr His Ala Glu Ser Phe Val Leu Thr Ser Ser Asp Gly Lys Phe
            85                  90                  95
His Leu Ile Ser Lys Leu Gly Arg Val Glu Lys Ser Val Glu Ala His
            100                 105                 110
Cys Gly Ala Val Leu Ala Gly Arg Trp Asn Tyr Glu Gly Thr Ala Leu
        115                 120                 125
Val Thr Val Gly Glu Asp Gly Gln Ile Xaa Ile Trp Ser Lys Thr Gly
    130                 135                 140
Met Leu Ile Ser
145         148
```

<210> 1416
<211> 122
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(122)
<223> X = any amino acid or stop code

<400> 1416

```
Ala Arg Ala Thr Thr Lys Arg His Phe Ile Leu Leu Phe Leu Phe Phe
1                5                   10                  15
Leu Arg Arg Cys Leu Phe Leu Ser Pro Arg Met Glu Cys Asn Gly Ala
            20                  25                  30
Ile Leu Ala His Cys Asn Leu His Leu Pro Gly Ser Ser Ser Ser Ser
        35                  40                  45
Ala Ser Ala Ser Xaa Val Ala Gly Ile Thr Asp Val Arg His His Ala
    50                  55                  60
Gln Leu Ile Leu Phe Val Phe Leu Val Glu Thr Gly Phe His Arg Val
65              70                  75                  80
Gly Gln Ala Gly Leu Lys Leu Leu Thr Ser Gly Asp Leu Leu Thr Ser
            85                  90                  95
Ala Ser Gln Ser Ala Gly Ile Ile Met Gly Ile Ser His Cys Ala Gln
            100                 105                 110
Pro Lys Lys Ala Phe Xaa Thr Lys Thr Phe
        115                 120     122
```

<210> 1417

```
<211> 138
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(138)
<223> X = any amino acid or stop code
```

```
    <400> 1417
Glu Ala Gly Ser Asn Asp Asp Leu Ala Thr Xaa Lys Thr Cys Gly Arg
 1           5                   10                  15
Ala Arg Pro Ser Ser Arg Ser Arg Gln Phe Gly Ser Arg Val Trp Asn
            20                  25                  30
His Arg Gln Gly Val Arg Ser Ser Pro Gly Glu Gly Ala Gly Ser Arg
        35                  40                  45
Ser Pro Cys Arg Arg Arg His Arg Arg Lys His Arg Arg Asn Val Gln
    50                  55                  60
Ser Pro Xaa Arg Arg Arg Ser Arg Ser Cys Ser Arg Arg Ser Gly Arg
65                  70                  75                  80
Cys Ser Val Ala Leu Leu Gly Ala Cys Pro Val Ala Gly His Ser Arg
            85                  90                  95
Gly Lys Val Val Cys Arg Arg Ala His Ala Ile Thr Gln Arg Arg Arg
            100                 105                 110
Cys Cys Gly Phe Asp Pro Met Val His Pro Lys Glu His Arg Gly Xaa
            115                 120                 125
Arg Glu Arg Ser Arg Lys Trp Ser Arg Ser
130                 135         138
```

```
    <210> 1418
    <211> 92
    <212>Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(92)
    <223> X = any amino acid or stop code
```

```
    <400> 1418
Ala Thr Ala Pro Gly Leu Phe Asn Phe Phe Xaa Phe Leu Phe Gln Cys
 1           5                   10                  15
Arg Glu Glu His Lys Lys Lys Asn Pro Glu Val Pro Val Asn Phe Ala
            20                  25                  30
Glu Phe Ser Lys Lys Cys Ser Gly Arg Trp Lys Thr Met Ser Ser Lys
        35                  40                  45
Glu Lys Phe Lys Phe Gly Glu Met Ala Lys Ala Asp Glu Val Cys Tyr
    50                  55                  60
Asp Arg Glu Met Lys Asp Tyr Gly Pro Ala Lys Gly Gly Lys Lys Lys
65                  70                  75                  80
Asp Pro Asn Ala Pro Lys Arg Pro Pro Ser Gly Phe
            85                  90      92
```

```
    <210> 1419
```

```
        <211> 44
        <212>Amino acid
        <213> Homo sapiens




        <400> 1419
Leu Thr Val Asn Tyr Val Leu Val Phe Ser Arg Asp Ser Gly Leu Arg
 1               5                   10                  15
Ala Ile Glu Asn Leu Met Gln Lys Lys Gly Lys Phe Asp Tyr Ile Leu
             20                   25                  30
Leu Glu Thr Thr Gly Leu Ala Asp Pro Gly Lys Lys
             35                   40          44




        <210> 1420
        <211> 91
        <212>Amino acid
        <213> Homo sapiens




        <400> 1420
His Glu Ala Ala Leu Cys Arg Thr Arg Ala Val Ala Ala Glu Arg His
 1               5                   10                  15
Phe Leu Arg Val Phe Leu Phe Phe Arg Pro Phe Arg Gly Val Gly Thr
             20                   25                  30
Glu Ser Gly Ser Glu Ser Gly Ser Ser Lys Ala Lys Glu Pro Arg Thr
             35                   40                  45
Pro Ser Ser Ser Tyr Gly Thr Ala Gln Tyr Arg Arg Trp Pro Ile Ala
     50                   55                  60
Gln Glu Tyr Lys His Cys Thr Ala His Asn Asp Thr Gly Thr Leu Cys
 65                   70                  75                  80
Ser Glu Leu Arg Glu Pro Trp Arg Arg Pro Gln
                 85                   90   91




        <210> 1421
        <211> 190
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(190)
        <223> X = any amino acid or stop code




        <400> 1421
Glu Gly Ser Ser Gln Ala Asn Thr Leu Arg Ser Arg Lys Glu Asn Arg
 1               5                   10                  15
Asn Asn Leu Leu Ala Cys Leu Glu Ser His Val Leu Arg Xaa Gln Phe
             20                   25                  30
Thr Glu Ser His Leu Cys Ser Leu Met Gly Asp Asn Pro Phe Gln Pro
             35                   40                  45
Lys Ser Asn Ser Lys Met Ala Glu Leu Phe Met Glu Cys Glu Glu Glu
     50                   55                  60
```

```
Glu Leu Glu Pro Trp Gln Lys Lys Val Lys Glu Val Glu Asp Asp Asp
65                  70                  75                  80
Asp Asp Glu Pro Ile Phe Val Gly Glu Ile Ser Ser Ser Lys Pro Ala
                85                  90                  95
Ile Ser Asn Ile Leu Asn Arg Val Asn Pro Ser Ser Tyr Ser Arg Gly
            100                 105                 110
Leu Lys Asn Gly Ala Leu Ser Arg Gly Ile Thr Ala Ala Phe Lys Pro
        115                 120                 125
Thr Ser Gln His Tyr Thr Asn Pro Thr Ser Asn Pro Val Pro Ala Ser
    130                 135                 140
Pro Ile Asn Phe His Pro Glu Ser Arg Ser Ser Asp Ser Ser Val Ile
145                 150                 155                 160
Gly Gln Pro Phe Ser Lys Pro Val Ser Val Ser Lys Thr Ile Arg Pro
                165                 170                 175
Ala Gln Gly Ser Ile Gly Cys Cys Leu Ser Ile Ser Thr Val
            180                 185                 190
```

```
<210> 1422
<211> 207
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1422
Cys Phe Ser Leu Glu Asp Ile Leu Asn Phe Phe Leu Gln Gly Phe Ser
1               5                   10                  15
Ala Gly Leu Phe Ala Phe Tyr His Asp Lys Asp Gly Asn Pro Leu Thr
            20                  25                  30
Ser Arg Phe Ala Asp Gly Leu Pro Pro Phe Asn Tyr Ser Leu Gly Leu
        35                  40                  45
Tyr Gln Trp Ser Asp Lys Val Val Arg Lys Val Glu Arg Leu Trp Asp
    50                  55                  60
Val Arg Asp Asn Lys Ile Val Arg His Thr Val Tyr Leu Leu Val Thr
65                  70                  75                  80
Pro Arg Val Val Glu Glu Ala Arg Lys His Phe Asp Cys Pro Val Leu
                85                  90                  95
Glu Gly Met Glu Leu Glu Asn Gln Gly Gly Val Gly Thr Glu Leu Asn
            100                 105                 110
His Trp Glu Lys Arg Leu Leu Glu Asn Glu Ala Met Thr Gly Ser His
        115                 120                 125
Thr Gln Asn Arg Val Leu Ser Arg Ile Thr Leu Ala Leu Met Glu Asp
    130                 135                 140
Thr Gly Arg Gln Met Leu Ser Pro Tyr Cys Asp Thr Leu Arg Ser Asn
145                 150                 155                 160
Pro Leu Gln Leu Thr Cys Arg Gln Asp Gln Arg Ala Val Ala Val Cys
                165                 170                 175
Asn Leu Gln Lys Phe Pro Lys Pro Leu Pro Gln Glu Tyr Gln Tyr Phe
            180                 185                 190
Asp Glu Leu Ser Gly Ile Pro Ala Glu Asp Leu Pro Tyr Tyr Gly
        195                 200                 205     207
```

```
<210> 1423
<211> 423
<212>Amino acid
<213> Homo sapiens
```

```
        <400> 1423
Ala Ala Arg Arg Arg Arg Gln Leu Val Ser Arg Arg Arg Thr Ala Glu
 1               5                  10                  15
Tyr Pro Arg Arg Arg Arg Ser Ser Pro Ser Ala Arg Pro Pro Asp Val
            20                  25                  30
Pro Gly Gln Gln Pro Lys Ala Ala Lys Ser Pro Ser Pro Val Gln Gly
        35                  40                  45
Lys Lys Ser Pro Arg Leu Leu Cys Ile Glu Lys Val Thr Thr Asp Lys
    50                  55                  60
Asp Pro Lys Glu Glu Lys Glu Glu Glu Asp Asp Ser Ala Leu Pro Gln
65                  70                  75                  80
Glu Val Ser Ile Ala Ala Ser Arg Pro Ser Arg Gly Trp Arg Ser Ser
                85                  90                  95
Arg Thr Ser Val Ser Arg His Arg Asp Thr Glu Asn Thr Arg Ser Ser
            100                 105                 110
Arg Ser Lys Thr Gly Ser Leu Gln Leu Ile Cys Lys Ser Glu Pro Asn
            115                 120                 125
Thr Asp Gln Leu Asp Tyr Asp Val Gly Glu Glu His Gln Ser Pro Gly
    130                 135                 140
Gly Ile Ser Ser Glu Glu Glu Glu Glu Glu Glu Glu Glu Met Leu Ile
145                 150                 155                 160
Ser Glu Glu Glu Ile Pro Phe Lys Asp Asp Pro Arg Asp Glu Thr Tyr
                165                 170                 175
Lys Pro His Leu Glu Arg Glu Thr Pro Lys Pro Arg Arg Lys Ser Gly
            180                 185                 190
Lys Val Lys Glu Glu Lys Glu Lys Lys Glu Ile Lys Val Glu Val Glu
            195                 200                 205
Val Glu Val Lys Glu Glu Glu Asn Glu Ile Arg Glu Asp Glu Glu Pro
210                 215                 220
Pro Arg Lys Arg Gly Arg Arg Arg Lys Asp Asp Lys Ser Pro Arg Leu
225                 230                 235                 240
Pro Lys Arg Arg Lys Lys Pro Pro Ile Gln Tyr Val Arg Cys Glu Met
            245                 250                 255
Glu Gly Cys Gly Thr Val Leu Ala His Pro Arg Tyr Leu Gln His His
            260                 265                 270
Ile Lys Tyr Gln His Leu Leu Lys Lys Lys Tyr Val Cys Pro His Pro
            275                 280                 285
Ser Cys Gly Arg Leu Phe Arg Leu Gln Lys Gln Leu Leu Arg His Ala
    290                 295                 300
Lys His His Thr Asp Gln Arg Asp Tyr Ile Cys Glu Tyr Cys Ala Arg
305                 310                 315                 320
Ala Phe Lys Ser Ser His Asn Leu Ala Val His Arg Met Ile His Thr
            325                 330                 335
Gly Glu Lys Pro Leu Gln Cys Glu Ile Cys Gly Phe Thr Cys Arg Gln
            340                 345                 350
Lys Ala Ser Leu Asn Trp His Met Lys Lys His Asp Ala Asp Ser Phe
    355                 360                 365
Tyr Gln Phe Ser Cys Asn Ile Cys Gly Lys Lys Phe Glu Lys Lys Asp
    370                 375                 380
Ser Val Val Ala His Lys Ala Lys Ser His Pro Glu Val Leu Ile Ala
385                 390                 395                 400
Glu Ala Leu Ala Ala Asn Ala Gly Ala Leu Ile Thr Ser Thr Asp Ile
            405                 410                 415
Leu Gly Thr Asn Pro Glu Ser
            420         423


        <210> 1424
        <211> 158
        <212> Amino acid
        <213> Homo sapiens
```

```
      <400> 1424
Met Thr Ala Asn Arg Leu Ala Glu Ser Leu Leu Ala Leu Ser Gln Gln
 1               5                   10                  15
Glu Glu Leu Ala Asp Leu Pro Lys Asp Tyr Leu Leu Ser Glu Ser Glu
            20                  25                  30
Asp Glu Gly Asp Asn Asp Gly Glu Arg Lys His Gln Lys Leu Leu Glu
            35                  40                  45
Ala Ile Ser Ser Leu Asp Gly Lys Asn Arg Arg Lys Leu Ala Glu Arg
    50                  55                  60
Ser Glu Ala Ser Leu Lys Val Ser Glu Phe Asn Val Ser Ser Glu Gly
65                  70                  75                  80
Ser Gly Glu Lys Leu Val Leu Ala Asp Leu Leu Glu Pro Val Lys Thr
            85                  90                  95
Ser Ser Ser Leu Ala Thr Val Lys Lys Gln Leu Ser Arg Val Lys Ser
            100                 105                 110
Lys Lys Thr Val Glu Leu Pro Leu Asn Lys Glu Glu Ile Glu Arg Ile
        115                 120                 125
His Arg Glu Val Ala Phe Asn Lys Thr Ala Gln Val Leu Ser Lys Trp
    130                 135                 140
Asp Pro Val Val Leu Lys Asn Arg Gln Ala Glu Gln Leu  *
145                 150                 155     157


    <210> 1425
    <211> 286
    <212>Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(286)
    <223> X = any amino acid or stop code




    <400> 1425
Arg Ile Asp Phe Met Phe His Ser Ser Ala Met Val Asn Ser His Arg
 1               5                   10                  15
Lys Pro Met Phe Asn Ile His Arg Gly Phe Tyr Cys Leu Thr Ala Ile
            20                  25                  30
Leu Pro Gln Ile Cys Ile Cys Ser Gln Phe Ser Val Pro Ser Ser Tyr
        35                  40                  45
His Phe Thr Glu Asp Pro Gly Ala Phe Pro Val Ala Thr Asn Gly Glu
    50                  55                  60
Arg Phe Pro Trp Gln Glu Leu Arg Leu Pro Ser Val Val Ile Pro Leu
65                  70                  75                  80
His Tyr Asp Leu Phe Val His Pro Asn Leu Thr Ser Leu Asp Phe Val
            85                  90                  95
Ala Ser Glu Lys Ile Glu Val Leu Val Ser Asn Ala Thr Gln Leu Ile
            100                 105                 110
Ile Leu His Ser Lys Asp Leu Glu Ile Thr Asn Ala Thr Leu Gln Ser
        115                 120                 125
Glu Glu Asp Ser Arg Tyr Met Lys Pro Gly Lys Glu Leu Lys Val Leu
    130                 135                 140
Ser Tyr Pro Ala His Glu Gln Ile Ala Leu Leu Val Pro Glu Lys Leu
145                 150                 155                 160
Thr Pro His Leu Lys Tyr Tyr Val Ala Met Asp Phe Gln Ala Lys Leu
            165                 170                 175
Gly Asp Gly Phe Glu Gly Phe Tyr Lys Ser Thr Tyr Arg Thr Leu Gly
```

```
                    180                    185          .          190
Gly Glu Thr Arg Ile Leu Ala Val Thr Asp Phe Glu Pro Thr Gln Ala
        195      .                200                    205
Arg Met Ala Phe Pro Cys Phe Asp Glu Pro Leu Phe Lys Ala Asn Phe
    210                      215                    220
Ser Ile Lys Ile Arg Arg Glu Ser Arg His Ile Ala Leu Ser Asn Met
225                      230                    235                    240
Pro Lys Val Lys Thr Ile Glu Leu Glu Gly Gly Leu Leu Glu Asp His
            245                    250                    255
Phe Glu Thr Thr Val Lys Met Ser Thr Tyr Leu Val Ala Tyr Ile Asp
        260                    265                    270
Leu Xaa Phe Pro Leu Met Gly Asn Asp Phe Leu Gly Arg Ser
     275                    280                    285 286


        <210> 1426
        <211> 224
        <212>Amino acid
        <213> Homo sapiens




        <400> 1426
Arg Ser Lys Ile Pro Arg Ser Asp Pro Arg Val Arg Thr Pro Ala Pro
1                 . 5         `          10                   15
Ala Glu Ala Glu Gln Gly Lys Ser Gln Cys Pro Ser Gly Ser Thr Ala
            20                  25                  30
Gln Ser Trp Ser Ala Met Asp Ile Leu Val Pro Leu Leu Gln Leu Leu
        35                  40                  45
Val Leu Leu Leu Thr Leu Pro Leu His Leu Met Ala Leu Leu Gly Cys
    50                  55                  60
Trp Gln Pro Leu Cys Lys Ser Tyr Phe Pro Tyr Leu Met Ala Val Leu
65                  70                  75                  80
Thr Pro Lys Ser Asn Arg Lys Met Glu Ser Lys Lys Arg Glu Leu Phe
            85                  90                  95
Ser Gln Ile Lys Gly Leu Thr Gly Ala Ser Gly Lys Val Ala Leu Leu
            100                 105                 110
Glu Leu Gly Cys Gly Thr Gly Ala Asn Phe Gln Phe Tyr Pro Pro Gly
        115                 120                 125
Cys Arg Val Thr Cys Leu Asp Pro Asn Pro His Phe Glu Lys Phe Leu
    130                 135                 140
Thr Lys Ser Met Ala Glu Asn Arg His Leu Gln Tyr Glu Arg Phe Val
145                 150                 155                 160
Val Ala Pro Gly Glu Asp Met Arg Gln Leu Ala Asp Gly Ser Met Asp
            165                 170                 175
Val Val Val Cys Thr Leu Val Leu Cys Ser Val Gln Ser Pro Arg Lys
            180                 185                 190
Val Leu Gln Glu Val Arg Arg Val Leu Arg Pro Gly Gly Val Leu Phe
        195                 200                 205
Phe Trp Glu His Val Ala Glu Pro Tyr Gly Ser Trp Ala Phe Met Trp
    210                 215                 220                 224


        <210> 1427
        <211> 133
        <212>Amino acid
        <213> Homo sapiens




                                889
```

```
      <400> 1427
Arg Leu Gln Asn Ser Ser Leu Met Asp Pro Lys Leu Gly Arg Met Ala
 1               5                   10                  15
Ala Ser Leu Leu Ala Val Leu Leu Leu Leu Leu Glu Arg Gly Met
            20                  25                  30
Phe Ser Ser Pro Ser Pro Pro Ala Leu Leu Glu Lys Val Phe Gln
        35                  40                  45
Tyr Ile Asp Leu His Gln Asp Glu Phe Val Gln Thr Leu Lys Glu Trp
    50                  55                  60
Val Ala Ile Glu Ser Asp Ser Val Gln Pro Val Pro Arg Phe Arg Gln
65                  70                  75                  80
Glu Leu Phe Arg Met Met Ala Val Ala Ala Asp Thr Leu Gln Arg Leu
            85                  90                  95
Gly Ala Arg Val Ala Ser Val Asp Met Gly Pro Gln Gln Leu Pro Asp
        100                 105                 110
Gly Gln Ser Leu Pro Ile Pro Pro Val Ile Leu Ala Glu Leu Gly Ser
        115                 120                 125
Asp Pro Thr Lys Gly
    130         133


      <210> 1428
      <211> 38
      <212>Amino acid
      <213> Homo sapiens


      <400> 1428
Phe Phe Phe Phe Glu Met Glu Ser Cys Ser Val Thr Gln Ala Gly Val
 1               5                   10                  15
Pro Trp His Asp Leu Ser Ser Leu Gln Pro Pro Pro Pro Arg Phe Lys
            20                  25                  30
Arg Phe Ser Cys Leu Ser
        35          38


      <210> 1429
      <211> 145
      <212>Amino acid
      <213> Homo sapiens


      <400> 1429
Asp Pro Lys Ala Gln Leu Pro Glu Pro Leu Arg Val Leu Trp Thr Ala
 1               5                   10                  15
His Leu Val Ala Met Ala Pro Gly Ser Arg Thr Ser Leu Leu Leu Ala
            20                  25                  30
Phe Ala Leu Leu Cys Leu Pro Trp Leu Gln Glu Ala Gly Ala Val Gln
        35                  40                  45
Thr Val Pro Leu Ser Arg Leu Phe Asp His Ala Met Leu Gln Ala His
    50                  55                  60
Arg Ala His Gln Leu Ala Ile Asp Thr Tyr Gln Glu Phe Glu Glu Thr
65                  70                  75                  80
Tyr Ile Pro Lys Asp Gln Lys Tyr Ser Phe Leu His Asp Ser Gln Thr
            85                  90                  95
Ser Phe Cys Phe Ser Asp Ser Ile Pro Thr Pro Ser Asn Met Glu Glu
```

```
                  100                    105                    110
Thr Gln Gln Lys Ser Asn Leu Glu Leu Leu Arg Ile Ser Leu Leu Leu
        115                    120                    125
Ile Glu Ser Trp Leu Glu Pro Val Arg Ile Leu Met Ser Ile Val Pro
        130                    135                    140
Asn
145
```

```
        <210> 1430
        <211> 453
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 1430
Phe Val Lys Leu Ile Lys Lys His Gln Ala Ala Met Glu Lys Glu Ala
 1           5                    10                    15
Lys Val Met Ser Asn Glu Glu Lys Lys Phe Gln Gln His Ile Gln Ala
        20                    25                    30
Gln Gln Lys Lys Glu Leu Asn Ser Phe Leu Glu Ser Gln Lys Arg Glu
        35                    40                    45
Tyr Lys Leu Arg Lys Glu Gln Leu Lys Glu Glu Leu Asn Glu Asn Gln
    50                    55                    60
Ser Thr Pro Lys Lys Glu Lys Gln Glu Trp Leu Ser Lys Gln Lys Glu
65                    70                    75                    80
Asn Ile Gln His Phe Gln Ala Glu Glu Glu Ala Asn Leu Leu Arg Arg
                85                    90                    95
Gln Arg Gln Tyr Leu Glu Leu Glu Cys Arg Arg Phe Lys Arg Arg Met
        100                    105                    110
Leu Leu Gly Arg His Asn Leu Glu Gln Asp Leu Val Arg Glu Glu Leu
        115                    120                    125
Asn Lys Arg Gln Thr Gln Lys Asp Leu Glu His Ala Met Leu Leu Arg
        130                    135                    140
Gln His Glu Ser Met Gln Glu Leu Glu Phe Arg His Leu Asn Thr Ile
145                    150                    155                    160
Gln Lys Met Arg Cys Glu Leu Ile Arg Leu Gln His Gln Thr Glu Leu
                165                    170                    175
Thr Asn Gln Leu Glu Tyr Asn Lys Arg Arg Glu Arg Glu Leu Arg Arg
            180                    185                    190
Lys His Val Met Glu Val Arg Gln Gln Pro Lys Ser Leu Lys Ser Lys
        195                    200                    205
Glu Leu Gln Ile Lys Lys Gln Phe Gln Asp Thr Cys Lys Ile Gln Thr
        210                    215                    220
Arg Gln Tyr Lys Ala Leu Arg Asn His Leu Leu Glu Thr Thr Pro Lys
225                    230                    235                    240
Ser Glu His Lys Ala Val Leu Lys Arg Leu Lys Glu Glu Gln Thr Arg
                245                    250                    255
Lys Leu Ala Ile Leu Ala Glu Gln Tyr Asp His Ser Ile Asn Glu Met
            260                    265                    270
Leu Ser Thr Gln Ala Leu Arg Leu Asp Glu Ala Gln Glu Ala Glu Cys
        275                    280                    285
Gln Val Leu Lys Met Gln Leu Gln Gln Glu Leu Glu Leu Leu Asn Ala
        290                    295                    300
Tyr Gln Ser Lys Ile Lys Met Gln Ala Glu Ala Gln His Asp Arg Glu
305                    310                    315                    320
Leu Arg Glu Leu Glu Gln Arg Val Ser Leu Arg Arg Ala Leu Leu Glu
                325                    330                    335
Gln Lys Ile Glu Glu Glu Met Leu Ala Leu Gln Asn Glu Arg Thr Glu
        340                    345                    350
Arg Ile Arg Ser Leu Leu Glu Arg Gln Ala Arg Glu Ile Glu Ala Phe
```

```
                355                      360                     365
Asp Ser Glu Ser Met Arg Leu Gly Phe Ser Asn Met Val Leu Ser Asn
    370                      375                     380
Leu Ser Pro Glu Ala Phe Ser His Ser Tyr Pro Gly Ala Ser Gly Trp
385                      390                     395                     400
Ser His Asn Pro Thr Gly Gly Pro Gly Pro His Trp Gly His Pro Met
                405                      410                     415
Gly Gly Pro Pro Gln Ala Trp Gly His Pro Met Gln Gly Gly Pro Gln
                420                      425                     430
Pro Trp Gly His Pro Ser Gly Pro Met Gln Gly Val Pro Arg Gly Ser
        435                      440                     445
Ser Met Gly Val Arg
450                  453
```

```
        <210> 1431
        <211> 151
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1431
Leu Ala His Gly Ser Phe Gly Val Ser Asp Phe Pro Ala Pro Ala Ala
1                   5                   10                  15
Ala Pro Ala His Thr Leu Thr Ser Phe Ser Gly Ser Leu Ser Pro Gln
                20                  25                  30
Phe Arg Lys Pro Leu Gly Arg Ala Pro Ala Met Pro Leu Val Arg Tyr
        35                  40                  45
Arg Lys Val Val Ile Leu Gly Tyr Arg Cys Val Gly Lys Thr Ser Leu
    50                  55                  60
Ala His Gln Phe Val Glu Gly Glu Phe Ser Glu Gly Tyr Asp Pro Thr
65                  70                  75                  80
Val Glu Asn Thr Tyr Ser Lys Ile Val Thr Leu Gly Lys Asp Glu Phe
                85                  90                  95
His Leu His Leu Val Asp Thr Ala Gly Gln Asp Glu Tyr Ser Ile Leu
            100                 105                 110
Pro Tyr Ser Phe Ile Ile Gly Val His Gly Tyr Val Leu Val Tyr Ser
        115                 120                 125
Val Thr Ser Leu His Ser Phe Gln Val Ile Glu Ser Leu Tyr Gln Lys
    130                 135                 140
Leu His Glu Gly His Gly Lys
145                 150 151
```

```
        <210> 1432
        <211> 514
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1432
Ser Ser Pro Ser Arg Glu Leu Cys Phe Tyr Gly Phe Trp Ile Ala Ser
1                   5                   10                  15
Ser Trp Trp Ser Arg Trp Val Gly Ser Leu Gly Pro Gly Ile Leu Pro
                20                  25                  30
Ser Pro Pro Ala Arg Gly Arg Thr Phe Ala Ser Val Ser Arg Leu Pro
        35                  40                  45
Pro Pro Trp Ser Ala Gly Ile Thr Leu Thr Pro Phe Leu Ile Cys Gln
```

892

```
        50                    55                      60
Ser Gly Ser Val Cys Pro Gly Leu Gly Ala Gly Phe Gly Val Arg Ser
65                     70                   75                  80
Phe His His Pro Val Ala Arg Ser Ala Val Leu Leu Leu Pro Leu Ala
                  85                    90                  95
Pro Ala Ala Ala Gln Asp Ser Thr Gln Ala Ser Thr Pro Gly Ser Pro
              100                   105                 110
Leu Ser Pro Thr Glu Tyr Glu Arg Phe Phe Ala Leu Leu Thr Pro Thr
          115                   120                 125
Trp Lys Ala Glu Thr Thr Cys Arg Leu Arg Ala Thr His Gly Cys Arg
      130                   135                 140
Asn Pro Thr Leu Val Gln Leu Asp Gln Tyr Glu Asn His Gly Leu Val
145               150                 155                 160
Pro Asp Gly Ala Val Cys Ser Asn Leu Pro Tyr Ala Ser Trp Phe Glu
                  165                 170                 175
Ser Phe Cys Gln Phe Thr His Tyr Arg Cys Ser Asn His Val Tyr Tyr
              180                 185                 190
Ala Lys Arg Val Leu Cys Ser Gln Pro Val Ser Ile Leu Ser Pro Asn
          195                 200                 205
Thr Leu Lys Glu Ile Glu Ala Ser Ala Glu Val Ser Pro Thr Thr Met
      210                 215                 220
Thr Ser Pro Ile Ser Pro His Phe Thr Val Thr Glu Arg Gln Thr Phe
225                 230                 235                 240
Gln Pro Trp Pro Glu Arg Leu Ser Asn Asn Val Glu Glu Leu Leu Gln
                  245                 250                 255
Ser Ser Leu Ser Leu Gly Gly Gln Glu Gln Ala Pro Glu His Lys Gln
              260                 265                 270
Glu Gln Gly Val Glu His Arg Gln Glu Pro Thr Gln Glu His Lys Gln
          275                 280                 285
Glu Glu Gly Gln Lys Gln Glu Glu Gln Glu Glu Gln Glu Glu Glu
      290                 295                 300
Gly Lys Gln Glu Glu Gly Gln Gly Thr Lys Glu Gly Arg Glu Ala Val
305                 310                 315                 320
Ser Gln Leu Gln Thr Asp Ser Glu Pro Lys Phe His Ser Glu Ser Leu
              325                 330                 335
Ser Ser Asn Pro Ser Ser Phe Ala Pro Arg Val Arg Glu Val Glu Ser
          340                 345                 350
Thr Pro Met Ile Met Glu Asn Ile Gln Glu Leu Ile Arg Ser Ala Gln
      355                 360                 365
Glu Ile Asp Glu Met Asn Glu Ile Tyr Asp Glu Asn Ser Tyr Trp Arg
      370                 375                 380
Asn Gln Asn Pro Gly Ser Leu Leu Gln Leu Pro His Thr Glu Ala Leu
385                 390                 395                 400
Leu Val Leu Cys Tyr Ser Ile Val Glu Asn Thr Cys Ile Ile Thr Pro
              405                 410                 415
Thr Ala Lys Ala Trp Lys Tyr Met Glu Glu Glu Ile Leu Gly Phe Gly
          420                 425                 430
Lys Ser Val Cys Asp Ser Leu Gly Arg Arg His Met Ser Thr Cys Ala
      435                 440                 445
Leu Cys Asp Phe Cys Ser Leu Lys Leu Glu Gln Cys His Ser Glu Ala
  450                 455                 460
Ser Leu Gln Arg Gln Gln Cys Asp Thr Ser His Lys Thr Pro Phe Val
465                 470                 475                 480
Ser Pro Leu Leu Ala Ser Gln Ser Leu Ser Ile Gly Asn Gln Val Gly
              485                 490                 495
Ser Pro Glu Ser Gly Arg Phe Tyr Gly Leu Asp Leu Tyr Gly Gly Leu
          500                 505                 510
His Met
514
```

```
<210> 1433
<211> 241
<212>Amino acid
```

893

<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(241)
<223> X = any amino acid or stop code

<400> 1433

```
Val Ser Trp Val Pro Ser Lys Asp Gly Asp Val Glu Gly Ala Arg Arg
1               5                   10                  15
Pro Phe Thr Arg Leu Asn Thr Ser Leu Gly Pro Gly Leu Gln Glu Gly
            20                  25                  30
Arg Arg Arg Thr Trp Leu Val Pro Ile Pro Gly Ala Val Leu Pro Gly
        35                  40                  45
Arg Thr Gln Glu Gln Pro Arg Ala Ser Pro Leu Tyr Xaa Pro Gly Ala
        50                  55                  60
Pro Pro Cys Gln Pro Gln Gly Leu Val Ala Gly Pro Trp Ala Gln Xaa
65              70                  75                  80
Ala Gly Leu Arg Ser Asp Gly Phe Gly Pro Trp Pro Trp Arg Leu Val
                85                  90                  95
Gly Thr Ala Gly Pro Arg Glu Lys Lys Val Gln Lys Ser Lys Cys Trp
            100                 105                 110
His Phe Arg Cys Gly Arg His Pro Ala Arg Arg Ser Gly Trp Ala Gly
        115                 120                 125
Arg His Ala Ser Leu Leu Ala Thr Gly Arg Pro Cys Ser Ser Ala Pro
    130                 135                 140
Ser Gln Gln Pro Leu Gly Thr Ala Gly Asp Ser Arg Gln Glu Leu Leu
145                 150                 155                 160
Arg Pro Pro Leu Val Xaa Val Asn Gly Ala Gln Ser Ser Ala Ala Gly
                165                 170                 175
Asp Trp Gly Ser Ser Pro Arg Thr Ala Gln Ala Leu Ala Arg Pro His
            180                 185                 190
Arg Leu Gly His His Pro Ala Ala Val Ala Pro Ala Ala Arg Leu Arg
        195                 200                 205
Thr Gln Ser Gly His Ser Pro Arg Gly Pro Leu Cys Arg Ser Pro Gly
    210                 215                 220
Ser Pro Arg Arg Met Gly Thr Trp Arg Gly Pro Ala Gly His Ser His
225                 230                 235                 240
Asp
241
```

<210> 1434
<211> 127
<212> Amino acid
<213> Homo sapiens

<400> 1434

```
Lys Thr Val Ala Glu Glu Ala Ser Val Gly Asn Pro Glu Gly Ala Phe
1               5                   10                  15
Met Lys Met Leu Gln Ala Arg Lys Gln His Met Ser Thr Glu Leu Thr
            20                  25                  30
Ile Glu Ser Glu Ala Pro Ser Asp Ser Ser Gly Ile Asn Leu Ser Gly
        35                  40                  45
Phe Gly Ser Glu Gln Leu Asp Thr Asn Asp Glu Ser Asp Val Ser Ser
    50                  55                  60
```

Ala Leu Ser Tyr Ile Leu Pro Tyr Leu Ser Leu Arg Asn Leu Gly Ala
65   70   75   80
Glu Ser Ile Leu Leu Pro Phe Thr Glu Gln Leu Phe Ser Asn Val Gln
            85   90   95
Asp Gly Asp Arg Leu Leu Ser Ile Leu Lys Asn Asn Arg Lys Ser Pro
            100   105   110
Ser Gln Ser Ser Leu Leu Gly Asn Lys Phe Lys Asn Lys Ile Phe
            115   120   125 127

<210> 1435
<211> 182
<212> Amino acid
<213> Homo sapiens

<400> 1435
Gly Glu Cys Phe Ile Met Ala Ala Val Val Gln Gln Asn Asp Leu Val
1   5   10   15
Phe Glu Phe Ala Ser Asn Val Met Glu Asp Glu Arg Gln Leu Gly Asp
            20   25   30
Pro Ala Ile Phe Pro Ala Val Ile Val Glu His Val Pro Gly Ala Asp
            35   40   45
Ile Leu Asn Ser Tyr Ala Gly Leu Ala Cys Val Glu Glu Pro Asn Asp
        50   55   60
Met Ile Thr Glu Ser Ser Leu Asp Val Ala Glu Glu Ile Ile Asp
65   70   75   80
Asp Asp Asp Asp Asp Ile Thr Leu Thr Val Glu Ala Ser Cys His Asp
                85   90   95
Gly Asp Glu Thr Ile Glu Thr Ile Glu Ala Ala Glu Ala Leu Leu Asn
            100   105   110
Met Asp Ser Pro Gly Pro Met Leu Asp Glu Lys Arg Ile Asn Asn Asn
            115   120   125
Ile Phe Ser Ser Pro Glu Asp Asp Met Val Val Ala Pro Val Thr His
        130   135   140
Val Ser Val Thr Leu Asp Gly Ile Pro Glu Val Met Glu Thr Gln Gln
145   150   155   160
Val Gln Glu Lys Tyr Ala Asp Ser Pro Gly Ala Ser Ser Pro Glu Gln
                165   170   175
Pro Lys Arg Lys Lys Lys
            180 182

<210> 1436
<211> 154
<212> Amino acid
<213> Homo sapiens

<400> 1436
His Glu Ala Ser Gly Val Ser Arg Ala Leu Leu Gln Ser Ala Pro Gly
1   5   10   15
Thr Pro Ala Thr Val Gly Ile Ser Val Gly Glu Leu Trp Pro Phe Ala
            20   25   30
Arg Cys Cys Ser His Ser Tyr Val Arg Ser Leu Arg Gly Leu Ser Val
            35   40   45
Ser Thr His Leu Leu Cys Phe Thr Ile Tyr Ile Met Asn Pro Ser Met
        50   55   60

```
Lys Gln Lys Gln Glu Glu Ile Lys Glu Asn Ile Lys Thr Ser Ser Val
65              70                  75                      80
Pro Arg Arg Thr Leu Lys Met Ile Gln Pro Ser Ala Ser Gly Ser Leu
                85                  90                  95
Val Gly Arg Glu Asn Glu Leu Ser Ala Gly Leu Ser Lys Arg Lys His
            100                 105                 110
Arg Asn Asp His Leu Thr Ser Thr Thr Ser Ser Pro Gly Val Ile Val
            115                 120                 125
Pro Glu Ser Ser Glu Asn Lys Asn Leu Gly Gly Val Thr Gln Glu Ser
        130                 135                 140
Phe Asp Leu Met Ile Lys Gly Met Lys Lys
145                 150             154
```

```
<210> 1437
<211> 63
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1437
Pro Leu Pro Ala Arg Gly Lys Ser Thr Leu Pro Ala Thr Phe Cys Ser
1               5                   10                  15
Pro Ser Ala Pro Glu Leu Ala Ser Met Ser Val Val Pro Pro Asn Arg
            20                  25                  30
Ser Gln Thr Gly Trp Pro Arg Gly Val Thr Gln Phe Gly Asn Lys Tyr
        35                  40                  45
Ile Gln Gln Thr Lys Pro Leu Thr Leu Glu Arg Thr Ile Asn Leu
    50                  55                  60          63
```

```
<210> 1438
<211> 140
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1438
Ala Glu Gly Glu Asp Val Pro Pro Leu Pro Thr Ser Ser Gly Asp Gly
1               5                   10                  15
Trp Glu Lys Asp Leu Glu Glu Ala Leu Glu Ala Gly Gly Cys Asp Leu
            20                  25                  30
Glu Thr Leu Arg Asn Ile Ile Gln Gly Arg Pro Leu Pro Ala Asp Leu
        35                  40                  45
Arg Ala Lys Val Trp Lys Ile Ala Leu Asn Val Ala Gly Lys Gly Asp
    50                  55                  60
Ser Leu Ala Ser Trp Asp Gly Ile Leu Asp Leu Pro Glu Gln Asn Thr
65              70                  75                      80
Ile His Lys Asp Cys Leu Gln Phe Ile Asp Gln Leu Ser Val Pro Glu
                85                  90                  95
Glu Lys Ala Ala Glu Leu Leu Leu Asp Ile Glu Ser Val Ile Thr Phe
            100                 105                 110
Tyr Cys Lys Ser Arg Asn Ile Lys Tyr Ser Thr Ser Leu Ser Trp Ile
            115                 120                 125
His Leu Leu Lys Pro Leu Val His Leu Gln Leu Pro
    130                 135                 140
```

896

```
        <210> 1439
        <211> 84
        <212>Amino acid
        <213> Homo sapiens




        <400> 1439
Ala Leu Pro Lys Phe Leu Thr His Gly Val Lys Ser Asn Glu Arg Val
 1               5                  10                  15
Val Val Trp Leu Phe Pro Pro Ser Phe Arg Ala Ala Thr Met Val His
            20                  25                  30
Met Asn Val Leu Pro Asp Ala Leu Lys Ser Ile Asn Asn Ala Glu Arg
        35                  40                  45
Arg Gly Lys Pro Gln Val Leu Ile Arg Leu Cys Ser Lys Ile Ile Ile
    50                  55                  60
Trp Phe Leu Thr Val Met Val Lys Tyr Gly Tyr Ile Gly Lys Phe Glu
65                  70                  75                  80
Pro Thr Arg Pro
            84


        <210> 1440
        <211> 255
        <212>Amino acid
        <213> Homo sapiens




        <400> 1440
Ala Met Ala Gln Tyr Gly His Pro Ser Pro Leu Gly Met Ala Ala Arg
 1               5                  10                  15
Glu Glu Leu Tyr Ser Lys Val Thr Pro Arg Arg Asn Arg Gln Gln Arg
            20                  25                  30
Pro Gly Thr Ile Lys His Gly Ser Ala Leu Asp Val Leu Leu Ser Met
        35                  40                  45
Gly Phe Pro Arg Ala Arg Ala Gln Lys Ala Leu Ala Ser Thr Gly Gly
    50                  55                  60
Arg Ser Val Gln Ala Ala Cys Asp Trp Leu Phe Ser His Val Gly Asp
65                  70                  75                  80
Pro Phe Leu Asp Asp Pro Leu Pro Arg Glu Tyr Val Leu Tyr Leu Arg
                85                  90                  95
Pro Thr Gly Pro Leu Ala Gln Lys Leu Ser Asp Phe Trp Gln Gln Ser
            100                 105                 110
Lys Gln Ile Cys Gly Lys Asn Lys Ala His Asn Ile Phe Pro His Ile
            115                 120                 125
Thr Leu Cys Gln Phe Phe Met Cys Glu Asp Ser Lys Val Asp Ala Leu
        130                 135                 140
Gly Glu Ala Leu Gln Thr Thr Val Ser Arg Trp Lys Cys Lys Phe Ser
145                 150                 155                 160
Ala Pro Leu Pro Leu Glu Leu Tyr Thr Ser Ser Asn Phe Ile Gly Leu
                165                 170                 175
Phe Val Lys Glu Asp Ser Ala Glu Val Leu Lys Lys Phe Ala Ala Asp
            180                 185                 190
Phe Ala Ala Glu Ala Ala Ser Lys Thr Glu Val His Val Glu Pro His
        195                 200                 205
Lys Lys Gln Leu His Val Thr Leu Ala Tyr His Phe Gln Ala Ser His
    210                 215                 220
Leu Pro Thr Leu Glu Lys Leu Ala Gln Asn Ile Asp Val Lys Leu Gly
225                 230                 235                 240
```

Cys Asp Trp Val Ala Thr Ile Phe Ser Arg Asp Ile Arg Phe Ala
                245   250   255

        <210> 1441
        <211> 134
        <212>Amino acid
        <213> Homo sapiens

        <400> 1441
Gln Thr Arg Pro Ala Ser Pro Arg Thr Ala Arg Glu Ser Val Leu Gly
  1   5   10   15
Val Ser Gln Asn Met Ser Phe Asn Leu Gln Ser Ser Lys Lys Leu Phe
             20   25   30
Ile Phe Leu Gly Lys Ser Leu Phe Ser Leu Leu Glu Ala Met Ile Phe
         35   40   45
Ala Leu Leu Pro Lys Pro Arg Lys Asn Val Ala Gly Glu Ile Val Leu
     50   55   60
Ile Thr Gly Ala Gly Ser Gly Leu Gly Arg Leu Leu Ala Leu Gln Phe
 65   70   75   80
Ala Arg Leu Gly Ser Val Leu Val Leu Trp Asp Ile Asn Lys Glu Gly
             85   90   95
Asn Glu Glu Thr Cys Lys Met Ala Arg Glu Ala Gly Ala Thr Arg Val
            100   105   110
His Ala Tyr Thr Cys Asp Cys Ser Gln Lys Glu Gly Val Tyr Arg Val
        115   120   125
Ala Asp Gln Val Lys Lys
    130   134

        <210> 1442
        <211> 155
        <212>Amino acid
        <213> Homo sapiens

        <400> 1442
Met Val Ala Arg Lys Gly Gln Lys Ser Pro Arg Phe Arg Arg Val Thr
  1   5   10   15
Cys Phe Leu Arg Leu Gly Arg Ser Thr Leu Leu Glu Leu Glu Pro Ala
             20   25   30
Gly Arg Pro Cys Ser Gly Arg Thr Arg His Arg Ala Leu His Arg Arg
         35   40   45
Leu Val Ala Cys Val Thr Val Ser Ser Arg Arg His Arg Lys Glu Ala
     50   55   60
Gly Arg Gly Arg Ala Glu Ser Phe Ile Ala Val Gly Met Ala Ala Pro
 65   70   75   80
Ser Met Lys Glu Arg Gln Val Cys Trp Gly Ala Arg Asp Glu Tyr Trp
             85   90   95
Lys Cys Leu Asp Glu Asn Leu Glu Asp Ala Ser Gln Cys Lys Lys Leu
            100   105   110
Arg Ser Ser Phe Glu Ser Ser Cys Pro Gln Gln Trp Ile Lys Tyr Phe
        115   120   125
Asp Lys Arg Arg Asp Tyr Leu Lys Phe Lys Glu Lys Phe Glu Ala Gly
    130   135   140
Gln Phe Glu Pro Ser Glu Thr Thr Ala Lys Ser
145   150   155

```
      <210> 1443
      <211> 157
      <212>Amino acid
      <213> Homo sapiens




      <400> 1443
Pro Ala Pro Ala Ala Arg Ser Arg Glu Leu Leu Lys Glu Leu Arg Asn
 1               5                   10                  15
Gly Gln Asp Met Asp Thr Val Val Phe Glu Asp Val Val Val Asp Phe
            20                  25                  30
Thr Leu Glu Glu Trp Ala Leu Leu Asn Pro Ala Gln Arg Lys Leu Tyr
            35                  40                  45
Arg Asp Val Met Leu Glu Thr Phe Lys His Leu Ala Ser Val Asp Asn
     50                  55                  60
Glu Ala Gln Leu Lys Ala Ser Gly Ser Ile Ser Gln Gln Asp Thr Ser
65                  70                  75                  80
Gly Glu Lys Leu Ser Leu Lys Gln Lys Ile Glu Lys Phe Thr Arg Lys
                85                  90                  95
Asn Ile Trp Ala Ser Leu Leu Gly Lys Asn Trp Glu Glu His Ser Val
            100                 105                 110
Lys Asp Lys His Asn Thr Lys Glu Arg His Leu Ser Arg Asn Pro Arg
        115                 120                 125
Val Glu Arg Pro Cys Lys Ser Ser Lys Gly Asn Lys Arg Gly Arg Thr
    130                 135                 140
Phe Arg Lys Thr Arg Asn Cys Asn Arg His Leu Arg Arg
145                 150                 155 157


      <210> 1444
      <211> 53
      <212>Amino acid
      <213> Homo sapiens




      <400> 1444
Cys Val Cys Gly Phe Phe Val Cys Phe Glu Thr Lys Ser Cys Phe Val
 1               5                   10                  15
Ala Gln Ala Gly Val Gln Trp His Asn Leu Ser Ser Leu Gln Ala Leu
            20                  25                  30
Pro Pro Gly Phe Lys Gln Phe Ser Cys Leu Ser Leu Leu Ser Ser Trp
            35                  40                  45
His Tyr Arg Arg Val
    50          53


      <210> 1445
      <211> 106
      <212>Amino acid
      <213> Homo sapiens




      <400> 1445
```

```
Gly Thr Arg Leu Arg Arg Arg Arg Glu Ala Val Trp Phe Glu Val Val
1               5                   10                  15
Asn Met Asp Phe Ser Arg Leu His Met Tyr Ser Pro Pro Gln Cys Val
            20                  25                  30
Pro Glu Asn Thr Gly Tyr Thr Tyr Ala Leu Ser Ser Ser Tyr Ser Ser
            35                  40                  45
Asp Ala Leu Asp Phe Glu Thr Glu His Lys Leu Asp Pro Val Phe Asp
    50                  55                  60
Ser Pro Arg Met Ser Arg Arg Ser Leu Arg Leu Ala Thr Thr Ala Cys
65                  70                  75                  80
Thr Leu Gly Asp Gly Glu Ala Val Gly Ala Asp Ser Gly Thr Ser Ser
                85                  90                  95
Ala Val Ser Leu Lys Asn Arg Ala Ala Arg
                100                 105 106
```

```
<210> 1446
<211> 95
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1446
Asp Thr Met Gln Ala Val Val Pro Leu Asn Lys Met Thr Ala Ile Ser
1               5                   10                  15
Pro Glu Pro Gln Thr Leu Ala Ser Thr Glu Gln Asn Glu Val Pro Arg
            20                  25                  30
Val Val Thr Ser Gly Glu Gln Glu Ala Ile Leu Arg Gly Asn Ala Ala
            35                  40                  45
Asp Ala Glu Ser Phe Arg Gln Arg Phe Arg Trp Phe Cys Tyr Ser Glu
    50                  55                  60
Val Ala Gly Pro Arg Lys Ala Leu Ser Gln Leu Trp Glu Leu Cys Asn
65                  70                  75                  80
Gln Trp Leu Arg Pro Asp Ile His Thr Lys Glu Gln Ile Leu Glu
            85                  90                  95
```

```
<210> 1447
<211> 127
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1447
Pro Ile Cys Leu Phe Ser Arg Pro Thr Leu Arg Pro Ser Arg Ser Lys
1               5                   10                  15
Val Ser Leu Ile Glu Gly Arg Gly Ala Asn Met Ala Ala Arg Trp Arg
            20                  25                  30
Phe Trp Cys Val Ser Val Thr Met Val Val Ala Leu Leu Ile Val Cys
        35                  40                  45
Asp Val Pro Ser Ala Ser Ala Gln Arg Lys Lys Glu Met Val Leu Ser
    50                  55                  60
Glu Lys Val Ser Gln Leu Met Glu Trp Thr Asn Lys Arg Pro Val Ile
65                  70                  75                  80
Arg Met Asn Gly Asp Lys Phe Arg Arg Leu Val Lys Ala Pro Pro Arg
                85                  90                  95
Asn Tyr Ser Val Ile Val Met Phe Thr Ala Leu Gln Leu His Arg Gln
                100                 105                 110
```

900

```
Cys Val Val Cys Lys Tyr Glu Leu Gln Leu Arg Phe Lys Ile Lys
        115             120             125     127
```

```
<210> 1448
<211> 143
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1448
Gln Met Arg Val Lys Asp Pro Thr Lys Ala Leu Pro Glu Lys Ala Lys
 1               5               10              15
Arg Ser Lys Arg Pro Thr Val Pro His Asp Glu Asp Ser Ser Asp Asp
            20              25              30
Ile Ala Val Gly Leu Thr Cys Gln His Val Ser His Ala Ile Ser Val
            35              40              45
Asn His Val Lys Arg Ala Ile Ala Glu Asn Leu Trp Ser Val Cys Ser
        50              55              60
Glu Cys Leu Lys Glu Arg Arg Phe Tyr Asp Gly Gln Leu Val Leu Thr
65              70              75              80
Ser Asp Ile Trp Leu Cys Leu Lys Cys Gly Phe Gln Gly Cys Gly Lys
            85              90              95
Asn Ser Glu Ser Gln His Ser Leu Lys His Phe Lys Ser Ser Arg Thr
            100             105             110
Glu Pro His Cys Ile Ile Ile Asn Leu Ser Thr Trp Ile Ile Trp Trp
        115             120             125
Tyr Glu Trp Asp Glu Lys Ile Phe Thr Pro Leu Asn Lys Lys Gly
    130             135             140     143
```

```
<210> 1449
<211> 121
<212>Amino acid
<213> Homo sapiens
```

```
<220>
<221> misc_feature
<222> (1)...(121)
<223> X = any amino acid or stop code
```

```
<400> 1449
Ala Lys Glu Arg Gly Glu Glu Arg Gln Gly Glu Gly Gly Gly Trp Leu
 1               5               10              15
Ser Gly Ser Arg Trp Pro Leu Val Arg Ser Ala Phe Val Pro Ala Pro
            20              25              30
Ser Ser Leu Ile Leu Ser Met Cys Leu Ser Pro Gly Ile Pro Glu Ala
        35              40              45
Ala Pro Asp Ser Pro Leu Thr Ala Ser Ala Pro Thr Pro Xaa Val Met
        50              55              60
Leu Leu Gly Asp Thr Gly Val Gly Lys Thr Cys Phe Leu Ile Gln Phe
65              70              75              80
Lys Asp Gly Ala Phe Leu Ser Gly Thr Phe Ile Ala Thr Val Gly Ile
            85              90              95
Asp Phe Arg Val Arg Trp Leu Gln Ala Leu Ala Ser Ser Arg Glu Pro
            100             105             110
Gly Leu Trp Leu Arg His Gly Gly Val
```

115   120 121

```
<210> 1450
<211> 76
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1450
Phe Tyr Pro Arg Ser Ser Ala Asp Leu Pro Phe Gln Thr Thr Arg Cys
1               5                   10                  15
Glu Phe Gln Thr Ser Val Met Glu Leu Ala His Ser Leu Leu Leu Asn
            20                  25                  30
Glu Glu Ala Leu Ala Gln Ile Thr Glu Ala Lys Arg Pro Val Phe Ile
        35                  40                  45
Phe Glu Trp Leu Arg Phe Leu Asp Lys Val Leu Val Ala Ala Asn Lys
    50                  55                  60
Val Trp Tyr Cys Ser Phe Phe Pro Val Ala Leu Thr
65              70                  75  76
```

```
<210> 1451
<211> 95
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1451
Met Asn Met Lys Gln Lys Ser Val Tyr Gln Gln Thr Lys Ala Leu Leu
1               5                   10                  15
Cys Lys Asn Phe Leu Lys Lys Trp Arg Met Lys Arg Glu Ser Leu Leu
            20                  25                  30
Glu Trp Gly Leu Ser Ile Leu Leu Gly Leu Cys Ile Ala Leu Phe Ser
        35                  40                  45
Ser Ser Met Arg Asn Val Gln Phe Pro Gly Met Ala Pro Gln Asn Leu
    50                  55                  60
Gly Arg Val Asp Lys Phe Asn Ser Ser Ser Leu Met Val Val Tyr Thr
65              70                  75                  80
Pro Ile Ser Asn Leu Thr Gln Gln Ile Met Asn Lys Thr Ala Leu
            85                  90                  95
```

```
<210> 1452
<211> 174
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1452
Ser Pro Gln Gly Asn Gly Cys Pro Asp Val Thr Gly Asp Ser Val Ile
1               5                   10                  15
Arg Val Pro Leu Thr Leu Leu Val His Asn Leu Ala Gly Leu Thr Gly
            20                  25                  30
Leu Leu His His Cys Leu Ser Gly Pro Leu Pro Ala Pro Ser Pro Pro
```

```
              35                    40                    45
Pro Ala Met Ser Ser Ser Arg Lys Asp His Leu Gly Ala Ser Ser Ser
        50                    55                    60
Glu Pro Leu Pro Val Ile Ile Val Gly Asn Gly Pro Ser Gly Ile Cys
65                    70                    75                    80
Leu Ser Tyr Leu Leu Ser Gly Tyr Thr Pro Tyr Thr Lys Pro Asp Ala
                85                    90                    95
Ile His Pro His Pro Leu Leu Gln Arg Lys Leu Thr Glu Ala Pro Gly
            100                   105                   110
Val Ser Ile Leu Asp Gln Asp Leu Asp Tyr Leu Ser Glu Gly Leu Glu
        115                   120                   125
Gly Arg Ser Gln Ser Pro Val Ala Leu Leu Phe Asp Ala Leu Leu Arg
        130                   135                   140
Pro Asp Thr Asp Phe Gly Gly Asn Met Lys Ser Val Leu Thr Trp Lys
145                   150                   155                   160
His Arg Lys Glu His Ala Ile Pro His Val Val Leu Gly Arg
                165                   170           174
```

```
        <210> 1453
        <211> 518
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1453
Asn Arg Arg Thr Arg Ala Gln Arg Cys Gln Arg Gly Arg Ser Cys Gly
1                   5                   10                    15
Ala Arg Glu Glu Glu Val Glu Pro Gly Thr Ala Arg Pro Pro Pro Ala
            20                    25                    30
Ala Ser Ala Met Asp Ala Ser Leu Glu Lys Ile Ala Asp Pro Thr Leu
        35                    40                    45
Ala Glu Met Gly Lys Asn Leu Lys Glu Ala Val Lys Met Leu Glu Asp
    50                    55                    60
Ser Gln Arg Arg Thr Glu Glu Glu Asn Gly Lys Lys Leu Ile Ser Gly
65                    70                    75                    80
Asp Ile Pro Gly Pro Leu Gln Gly Ser Gly Gln Asp Met Val Ser Ile
                85                    90                    95
Leu Gln Leu Val Gln Asn Leu Met His Gly Asp Glu Asp Glu Glu Pro
            100                   105                   110
Gln Ser Pro Arg Ile Gln Asn Ile Gly Glu Gln Gly His Met Ala Leu
        115                   120                   125
Leu Gly His Ser Leu Gly Ala Tyr Ile Ser Thr Leu Asp Lys Glu Lys
    130                   135                   140
Leu Arg Lys Leu Thr Thr Arg Ile Leu Ser Asp Thr Thr Leu Trp Leu
145                   150                   155                   160
Cys Arg Ile Phe Arg Tyr Glu Asn Gly Cys Ala Tyr Phe His Glu Glu
                165                   170                   175
Glu Arg Glu Gly Leu Ala Lys Ile Cys Arg Leu Ala Ile His Ser Arg
            180                   185                   190
Tyr Glu Asp Phe Val Val Asp Gly Phe Asn Val Leu Tyr Asn Lys Lys
        195                   200                   205
Pro Val Ile Tyr Leu Ser Ala Ala Ala Arg Pro Gly Leu Gly Gln Tyr
    210                   215                   220
Leu Cys Asn Gln Leu Gly Leu Pro Phe Pro Cys Leu Cys Arg Val Pro
225                   230                   235                   240
Cys Asn Thr Val Phe Gly Ser Gln His Gln Met Asp Val Ala Phe Leu
                245                   250                   255
Glu Lys Leu Ile Lys Asp Asp Ile Glu Arg Gly Arg Leu Pro Leu Leu
            260                   265                   270
Leu Val Ala Asn Ala Gly Thr Ala Ala Val Gly His Thr Asp Lys Ile
```

```
            275                   280                   285
Gly Arg Leu Lys Glu Leu Cys Glu Gln Tyr Gly Ile Trp Leu His Val
    290                   295                   300
Glu Gly Val Asn Leu Ala Thr Leu Ala Leu Gly Tyr Val Ser Ser Ser
305                   310                   315                   320
Val Leu Ala Ala Ala Lys Cys Asp Ser Met Thr Met Thr Pro Gly Pro
                325                   330                   335
Trp Leu Gly Leu Pro Ala Val Pro Ala Val Thr Leu Tyr Lys His Asp
            340                   345                   350
Asp Pro Ala Leu Thr Leu Val Ala Gly Leu Thr Ser Asn Lys Pro Thr
            355                   360                   365
Asp Lys Leu Arg Ala Leu Pro Leu Trp Leu Ser Leu Gln Tyr Leu Gly
    370                   375                   380
Leu Asp Gly Phe Val Glu Arg Ile Lys His Ala Cys Gln Leu Ser Gln
385                   390                   395                   400
Arg Leu Gln Glu Ser Leu Lys Lys Val Asn Tyr Ile Lys Ile Leu Val
                405                   410                   415
Glu Asp Glu Leu Ser Ser Pro Val Val Val Phe Arg Phe Phe Gln Glu
            420                   425                   430
Leu Pro Gly Ser Asp Pro Val Phe Lys Ala Val Pro Val Pro Asn Met
            435                   440                   445
Thr Pro Ser Gly Val Gly Arg Glu Arg His Ser Cys Asp Ala Leu Asn
    450                   455                   460
Arg Trp Leu Gly Glu Gln Leu Lys Gln Leu Val Pro Ala Ser Gly Leu
465                   470                   475                   480
Thr Val Met Asp Leu Glu Ala Glu Gly Thr Cys Leu Arg Phe Ser Pro
            485                   490                   495
Leu Met Thr Ala Ala Gly Lys Pro Gly Leu Val Asp Ile Pro Cys Phe
            500                   505                   510
Cys Ser Gly Ala Ala Gly
            515         518
```

```
        <210> 1454
        <211> 185
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1454
Leu Cys Ile Met Asp Thr Lys Glu Glu Lys Lys Glu Arg Lys Gln Ser
1               5                   10                  15
Tyr Phe Ala Arg Leu Lys Lys Lys Gln Ala Lys Gln Asn Ala Glu
            20                  25                  30
Thr Ala Ser Ala Val Ala Thr Arg Thr His Thr Gly Lys Glu Asp Asn
        35                  40                  45
Asn Thr Val Val Leu Glu Pro Asp Lys Cys Asn Ile Ala Val Glu Glu
    50                  55                  60
Glu Tyr Met Thr Asp Glu Lys Lys Lys Arg Lys Ser Asn Gln Leu Lys
65                  70                  75                  80
Glu Ile Arg Arg Thr Glu Leu Lys Arg Tyr Tyr Ser Ile Asp Asp Asn
                85                  90                  95
Gln Asn Lys Thr His Asp Lys Lys Glu Lys Lys Met Val Val Gln Lys
            100                 105                 110
Pro His Gly Thr Met Glu Tyr Thr Ala Gly Asn Gln Asp Thr Leu Asn
        115                 120                 125
Ser Ile Ala Leu Lys Phe Asn Ile Thr Pro Asn Lys Leu Val Glu Leu
    130                 135                 140
Asn Lys Leu Phe Thr His Thr Ile Val Pro Gly Gln Val Leu Phe Val
145                 150                 155                 160
Pro Asp Ala Asn Ser Pro Ser Ser Thr Leu Arg Leu Ser Ser Ser Ser
```

```
                        165                   170                    175
Pro Gly Ala Thr Val Ser Pro Ser Ser
                        180                   185


        <210> 1455
        <211> 206
        <212>Amino acid
        <213> Homo sapiens




        <400> 1455
Ser Ala Gly Gly Asp Ser Cys Arg Ala Val Pro Met Leu Arg Phe Pro
 1               5                   10                  15
Thr Cys Phe Pro Ser Phe Arg Val Val Gly Glu Lys Gln Leu Pro Gln
                 20                  25                  30
Glu Ile Ile Phe Leu Val Trp Ser Pro Lys Arg Asp Leu Ile Ala Leu
         35                  40                  45
Ala Asn Thr Ala Gly Glu Val Leu Leu His Arg Leu Ala Ser Phe His
     50                  55                  60
Arg Val Trp Ser Phe Pro Pro Asn Glu Asn Thr Gly Lys Glu Val Thr
 65              70                  75                  80
Cys Leu Ala Trp Arg Pro Asp Gly Lys Leu Leu Ala Phe Ala Leu Ala
                 85                  90                  95
Asp Thr Lys Lys Ile Val Leu Cys Asp Val Glu Lys Pro Glu Ser Leu
             100                 105                 110
His Ser Phe Ser Val Glu Ala Pro Val Ser Cys Met His Trp Met Glu
         115                 120                 125
Val Thr Val Glu Ser Ser Val Leu Thr Ser Phe Tyr Asn Ala Glu Asp
     130                 135                 140
Glu Ser Asn Leu Leu Leu Pro Lys Leu Pro Thr Leu Pro Lys Asn Tyr
145                 150                 155                 160
Ser Asn Thr Ser Lys Ile Phe Ser Glu Glu Asn Ser Asp Glu Ile Ile
                 165                 170                 175
Lys Leu Leu Gly Asp Val Arg Leu Asn Ile Leu Val Leu Gly Gly Ser
             180                 185                 190
Ser Gly Phe Ile Glu Leu Tyr Ala Tyr Gly Met Phe Lys Ile
         195                 200                 205 206


        <210> 1456
        <211> 100
        <212>Amino acid
        <213> Homo sapiens




        <400> 1456
Pro Arg Asp Pro Val Thr Asp Arg Ala Arg Ala Met Pro Arg Arg Gly
 1               5                   10                  15
Leu Val Ala Gly Pro Asp Leu Glu Tyr Phe Gln Arg His Tyr Phe Thr
                 20                  25                  30
Pro Ala Glu Val Ala Gln His Asn Arg Pro Glu Asp Leu Trp Val Ser
         35                  40                  45
Tyr Leu Gly Arg Val Tyr Asp Leu Thr Ser Leu Ala Gln Glu Tyr Lys
     50                  55                  60
Gly Asn Leu Leu Leu Lys Pro Ile Val Glu Val Ala Gly Gln Asp Ile
 65              70                  75                  80
Ser His Trp Phe Asp Pro Lys Thr Arg Asp Val Ser Tyr Ala Gly Thr
```

```
                     85                    90                    95
Trp Asp Cys Gly
             100
```

```
        <210> 1457
        <211> 159
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1457
Arg Ile Pro Gly Arg Arg Phe Arg Ala Ala Phe Val Leu Gly Ser Ala
 1               5                   10                  15
Asn Val Ala Ser Ser Val Arg Leu Arg Cys Ser Phe Pro Leu Ser Leu
            20                  25                  30
Gly Gly Pro Ser Gly Pro Ala Ala Ala Ser Val Ala Leu Gly Pro Ala
            35                  40                  45
Gly Pro Gly Arg Ser Leu Gly Arg Thr Pro Asp Thr Gly Asp Trp Glu
    50                  55                  60
Met Asp Ser Val Ser Phe Glu Asp Val Ala Val Ala Phe Thr Gln Glu
65                  70                  75                  80
Glu Trp Ala Leu Leu Asp Pro Ser Gln Lys Asn Leu Tyr Arg Asp Val
                85                  90                  95
Met Gln Glu Ile Phe Arg Asn Leu Ala Ser Val Gly Asn Lys Ser Glu
            100                 105                 110
Asp Gln Asn Ile Gln Asp Asp Phe Lys Asn Pro Gly Arg Asn Leu Ser
            115                 120                 125
Ser His Val Val Glu Arg Leu Phe Glu Ile Lys Glu Gly Ser Gln Tyr
    130                 135                 140
Gly Glu Thr Phe Ser Gln Asp Ser Asn Leu Asn Leu Asn Lys Ile
145                 150                 155         159
```

```
        <210> 1458
        <211> 154
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1458
Ser Leu Ser Leu Ser Val Ser Pro Phe Leu Arg Leu Ser Leu Gly Arg
 1               5                   10                  15
Val Gly Gly Met Ala Glu Glu Met Glu Ser Ser Leu Glu Ala Ser Phe
            20                  25                  30
Ser Ser Ser Gly Ala Val Ser Gly Ala Ser Gly Phe Leu Pro Pro Ala
            35                  40                  45
Arg Ser Arg Ile Phe Lys Ile Ile Val Ile Gly Asp Ser Asn Val Gly
    50                  55                  60
Lys Thr Cys Leu Thr Tyr Arg Phe Cys Ala Gly Arg Phe Pro Asp Arg
  65                  70                  75                  80
Thr Glu Ala Thr Ile Gly Val Asp Phe Arg Glu Arg Ala Val Glu Ile
                85                  90                  95
Asp Gly Glu Arg Ile Lys Ile Gln Leu Trp Asp Thr Ala Gly Gln Glu
            100                 105                 110
Arg Phe Arg Lys Ser Met Val Gln His Tyr Tyr Arg Asn Val His Ala
            115                 120                 125
Val Val Phe Val Tyr Asp Met Thr Asn Met Ala Ser Phe His Ser Leu
```

```
            130                    135                    140
Pro Ser Trp Ile Glu Glu Cys Lys Gln His
145                    150                    154
```

```
        <210> 1459
        <211> 136
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1459
Arg Arg Pro Ser Pro Gly Ser Ile Val Ile Met Ala Ala Glu Ser Asp
  1               5                  10                  15
Val Leu His Phe Gln Phe Glu Gln Gln Gly Asp Val Val Leu Gln Lys
                20                  25                  30
Met Asn Leu Leu Arg Gln Gln Asn Leu Phe Cys Asp Val Ser Ile Tyr
        35                  40                  45
Ile Asn Asp Thr Glu Phe Gln Gly His Lys Val Ile Leu Ala Ala Cys
    50                  55                  60
Ser Thr Phe Met Arg Asp Gln Phe Leu Leu Thr Gln Ser Lys His Val
65                  70                  75                  80
Arg Ile Thr Ile Leu Gln Ser Ala Glu Val Gly Arg Lys Leu Leu Leu
                85                  90                  95
Ser Cys Tyr Thr Gly Ala Leu Glu Val Lys Arg Lys Glu Leu Leu Lys
            100                 105                 110
Tyr Leu Thr Ala Ala Ser Tyr Leu Gln Met Val His Ile Ala Glu Lys
        115                 120                 125
Arg Thr Glu Ala Phe Val Lys Phe
130                 135 136
```

```
        <210> 1460
        <211> 219
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1460
Ala Glu Gly Leu Gln Ser Ala Ala Gly Ile Arg Ile Asp Thr Lys Ala
  1               5                  10                  15
Gly Pro Pro Glu Met Leu Lys Pro Leu Trp Lys Ala Ala Val Ala Pro
                20                  25                  30
Thr Trp Pro Cys Ser Met Pro Pro Arg Arg Pro Trp Asp Arg Gln Ala
        35                  40                  45
Gly Thr Leu Gln Val Leu Gly Ala Leu Ala Val Leu Trp Leu Gly Ser
    50                  55                  60
Val Ala Leu Ile Cys Leu Leu Trp Gln Val Pro Arg Pro Pro Thr Trp
65                  70                  75                  80
Gly Gln Val Gln Pro Lys Asp Val Pro Arg Ser Trp Glu His Gly Ser
                85                  90                  95
Ser Pro Ala Trp Glu Pro Leu Glu Ala Glu Ala Arg Gln Gln Arg Asp
            100                 105                 110
Ser Cys Gln Leu Val Leu Val Glu Ser Ile Pro Gln Asp Leu Pro Ser
        115                 120                 125
Ala Ala Gly Ser Pro Ser Ala Gln Pro Leu Gly Gln Ala Trp Leu Gln
    130                 135                 140
Leu Leu Asp Thr Ala Gln Glu Ser Val His Val Ala Ser Tyr Tyr Trp
```

```
    145                    150                    155                    160
Ser Leu Thr Gly Pro Asp Ile Gly Val Asn Asp Ser Ser Ser Gln Leu
                  165                    170                    175
Gly Glu Ala Leu Leu Gln Lys Leu Gln Gln Leu Leu Gly Arg Asn Ile
         180                    185                    190
Ser Leu Ala Val Ala Thr Ser Ser Pro Thr Leu Ala Arg Thr Ser Thr
         195                    200                    205
Asp Leu Gln Val Leu Ala Ala Arg Gly Ala His
    210                    215                    219
```

```
    <210> 1461
    <211> 80
    <212> Amino acid
    <213> Homo sapiens
```

```
    <400> 1461
Arg Lys Lys Lys Met Pro Leu Pro Phe Gly Leu Lys Leu Lys Arg Thr
1               5                   10                  15
Arg Arg Tyr Thr Val Ser Ser Lys Ser Cys Leu Val Ala Arg Ile Gln
         20                  25                  30
Leu Leu Asn Asn Glu Phe Val Glu Phe Thr Leu Ser Val Glu Ser Thr
         35                  40                  45
Gly Gln Glu Ser Leu Glu Ala Val Ala Gln Arg Leu Glu Leu Arg Glu
    50                  55                  60
Val Thr Tyr Phe Ser Leu Trp Tyr Tyr Asn Lys Gln Asn Gln Arg Arg
65                   70                  75                  80
```

```
    <210> 1462
    <211> 176
    <212> Amino acid
    <213> Homo sapiens
```

```
    <400> 1462
Leu Gln Pro Leu Ser Ser Trp Glu Ser Ala Ser Glu Val Thr Arg Ser
1               5                   10                  15
Pro Val Ser Pro Glu Asp Val Lys Gln Ala Thr Ser Asn Phe Glu Asn
         20                  25                  30
Leu Gln Lys Gln Leu Ala Arg Lys Met Lys Leu Pro Ile Phe Ile Ala
         35                  40                  45
Asp Ala Phe Thr Ala Arg Ala Phe Arg Gly Asn Pro Ala Ala Val Cys
    50                  55                  60
Leu Leu Glu Asn Glu Leu Asp Glu Asp Met His Gln Lys Ile Ala Arg
65                   70                  75                  80
Glu Met Asn Leu Ser Glu Thr Ala Phe Ile Arg Lys Leu His Pro Thr
              85                  90                  95
Asp Asn Phe Ala Gln Ser Ser Cys Phe Gly Leu Arg Trp Phe Thr Pro
         100                    105                    110
Ala Ser Glu Val Pro Leu Cys Gly His Ala Thr Leu Ala Ser Ala Ala
         115                    120                    125
Val Leu Phe His Lys Ile Lys Asn Met Asn Ser Thr Leu Thr Phe Val
    130                    135                    140
Thr Leu Ser Gly Glu Leu Arg Ala Arg Arg Ala Glu Asp Gly Ile Val
```

```
145                    150                    155                    160
Leu Asp Leu Pro Leu Tyr Pro Ala His Pro Gln Asp Phe His Glu  *
                  165                    170                    175


        <210> 1463
        <211> 150
        <212>Amino acid
        <213> Homo sapiens




        <400> 1463
Ala Ala Asp Thr Met Gln Ser Asp Asp Val Ile Trp Asp Thr Leu Gly
 1               5                    10                    15
Asn Lys Gln Phe Cys Ser Phe Lys Ile Arg Thr Lys Thr Gln Ser Phe
              20                    25                    30
Cys Arg Asn Glu Tyr Ser Leu Thr Gly Leu Cys Asn Arg Ser Ser Cys
           35                    40                    45
Pro Leu Ala Asn Ser Gln Tyr Ala Thr Ile Lys Glu Glu Lys Gly Gln
     50                    55                    60
Cys Tyr Leu Tyr Met Lys Val Ile Glu Arg Ala Ala Phe Pro Arg Arg
 65                    70                    75                    80
Leu Trp Glu Arg Val Arg Leu Ser Lys Asn Tyr Glu Lys Ala Leu Glu
                  85                    90                    95
Gln Ile Asp Glu Asn Leu Ile Tyr Trp Pro Arg Phe Ile Arg His Lys
                 100                   105                   110
Cys Lys Gln Arg Phe Thr Lys Ile Thr Gln Tyr Leu Ile Arg Ile Arg
                 115                   120                   125
Lys Leu Thr Leu Lys Arg Gln Arg Lys Leu Val Pro Leu Ser Lys Lys
     130                   135                   140
Val Glu Arg Arg Glu Lys
145                   150


        <210> 1464
        <211> 86
        <212>Amino acid
        <213> Homo sapiens




        <400> 1464
Phe Val Glu Arg Gly Leu Gly Asp Pro Ala Leu Pro Thr Leu Met Phe
 1               5                    10                    15
Glu Glu Pro Glu Trp Ala Glu Ala Ala Pro Val Ala Ala Gly Leu Gly
              20                    25                    30
Pro Val Ile Ser Arg Pro Pro Ala Ala Ser Ser Gln Asn Lys Val
           35                    40                    45
Ser Asp Ser Arg Glu Gln Trp Glu Leu Phe Gln Ala Ala Lys Arg Thr
     50                    55                    60
Leu Val Asp Pro Ser Ala Val Cys Ile Ala Gly Arg Asp Thr Cys Gly
 65                    70                    75                    80
Thr Val Lys Gly Glu Ser
                  85  86


        <210> 1465
        <211> 286
        <212>Amino acid
```

<213> Homo sapiens

<400> 1465

```
Val Val Glu Phe Leu Trp Ser Arg Arg Pro Ser Gly Ser Ser Asp Pro
1               5                   10                  15
Arg Pro Arg Arg Pro Ala Ser Lys Cys Gln Met Met Glu Glu Arg Ala
        20                  25                  30
Asn Leu Met His Met Met Lys Leu Ser Ile Lys Val Leu Leu Gln Ser
        35                  40                  45
Ala Leu Ser Leu Gly Arg Ser Leu Asp Ala Asp His Ala Pro Leu Gln
    50                  55                  60
Gln Phe Phe Val Val Met Glu His Cys Leu Lys His Gly Leu Lys Val
65                  70                  75                  80
Lys Lys Ser Phe Ile Gly Gln Asn Lys Ser Phe Phe Gly Pro Leu Glu
                85                  90                  95
Leu Val Glu Lys Leu Cys Pro Glu Ala Ser Asp Ile Ala Thr Ser Val
            100                 105                 110
Arg Asn Leu Pro Glu Leu Lys Thr Ala Val Gly Arg Gly Arg Ala Trp
        115                 120                 125
Leu Tyr Leu Ala Leu Met Gln Lys Lys Leu Ala Asp Tyr Leu Lys Val
    130                 135                 140
Leu Ile Asp Asn Lys His Leu Leu Ser Glu Phe Tyr Glu Pro Glu Ala
145                 150                 155                 160
Leu Met Met Glu Glu Glu Gly Met Val Ile Val Gly Leu Leu Val Gly
            165                 170                 175
Leu Asn Val Leu Asp Ala Asn Leu Cys Leu Lys Gly Glu Asp Leu Asp
        180                 185                 190
Ser Gln Val Gly Val Ile Asp Phe Ser Leu Tyr Leu Lys Asp Val Gln
    195                 200                 205
Asp Leu Asp Gly Gly Lys Glu His Glu Arg Ile Thr Asp Val Leu Asp
    210                 215                 220
Gln Lys Asn Tyr Val Glu Glu Leu Asn Arg His Leu Ser Cys Thr Val
225                 230                 235                 240
Gly Asp Leu Gln Thr Lys Ile Asp Gly Leu Glu Lys Thr Asn Ser Lys
            245                 250                 255
Leu Gln Glu Arg Val Ser Ala Ala Thr Asp Arg Ile Cys Ser Leu Gln
        260                 265                 270
Glu Glu Gln Gln Gln Leu Arg Glu Gln Asn Glu Leu Ile Arg
        275                 280                 285 286
```


<210> 1466
<211> 127
<212>Amino acid
<213> Homo sapiens

<400> 1466

```
Gly Cys Tyr Ala Pro Ser Pro His Leu Gly Gly Ser Leu Thr Pro Arg
1               5                   10                  15
Phe Phe Pro Asn Gly Val Phe His Arg Arg Leu Pro Arg Pro Arg Pro
        20                  25                  30
Pro Gln Pro Pro Ser Val Ser Ser Ala Pro Thr Leu Arg Pro Leu Cys
    35                  40                  45
Ala His Phe Ser Leu Gly Lys Leu Arg Leu Arg Val Arg Lys Ser Ala
    50                  55                  60
Glu Val Ala Pro Pro Arg Thr Glu Lys Gly Trp Gly Ser Ala Glu Pro
```

```
65                    70                 75                    80
Arg His Ser Arg Ala Pro Leu Gly Leu Gln Gly Leu Arg Met Ala Ala
                    85                 90                    95
Ser Ala Gln Val Ser Val Thr Phe Glu Asp Val Ala Val Thr Phe Thr
                100               105               110
Gln Glu Glu Trp Gly Gln Leu Asp Ala Ala Gln Arg Thr Leu Tyr
            115               120               125   127
```

```
<210> 1467
<211> 146
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1467
Phe Arg Gly Ser Leu Ser Ser Pro Ser Ser Leu Arg Gly Arg Arg Leu
1               5               10               15
Val Thr Gly Gln Thr Ser Pro Arg Gly Thr Trp Cys Leu Tyr Pro Gly
            20               25               30
Phe Cys Arg Ser Val Ala Cys Ala Met Pro Cys Cys Ser His Arg Ser
     35               40               45
Cys Arg Glu Asp Pro Gly Thr Ser Glu Ser Arg Glu Met Asp Pro Val
     50               55               60
Val Phe Glu Asp Val Ala Val Asn Phe Thr Gln Glu Glu Trp Thr Leu
65               70               75               80
Leu Asp Ile Ser Gln Lys Asn Leu Phe Arg Glu Val Met Leu Glu Thr
            85               90               95
Phe Arg Asn Leu Thr Ser Ile Gly Lys Lys Trp Ser Asp Gln Asn Ile
            100               105               110
Glu Tyr Glu Tyr Gln Asn Pro Arg Arg Ser Phe Arg Ser Leu Ile Glu
            115               120               125
Glu Lys Val Asn Glu Ile Lys Glu Asp Ser His Cys Gly Glu Thr Phe
            130               135               140
Thr Gln
145 146
```

```
<210> 1468
<211> 44
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1468
Leu Asn Phe Ala Asn Ser Ala Ala Phe Ala Val Thr Met Pro Gln Asn
1               5               10               15
Glu Tyr Ile Glu Leu His Arg Lys Arg Tyr Gly Phe Arg Leu Asp Tyr
            20               25               30
His Glu Lys Lys Arg Lys Lys Gln Ser Arg Glu Ala
            35               40   44
```

```
<210> 1469
<211> 198
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1469
Ser Gly Asp Leu Ser Pro Ala Glu Leu Met Met Leu Thr Ile Gly Asp
1               5                   10                  15
Val Ile Lys Gln Leu Ile Glu Ala His Glu Gln Gly Lys Asp Ile Asp
            20                  25                  30
Leu Asn Lys Val Lys Thr Lys Thr Ala Ala Lys Tyr Gly Leu Ser Ala
        35                  40                  45
Gln Pro Arg Leu Val Asp Ile Ile Ala Ala Val Pro Pro Gln Tyr Arg
    50                  55                  60
Lys Val Leu Met Pro Lys Leu Lys Ala Lys Pro Ile Arg Thr Ala Ser
65                  70                  75                  80
Gly Ile Ala Val Val Ala Val Met Cys Lys Pro His Arg Cys Pro His
            85                  90                  95
Ile Ser Phe Thr Gly Asn Ile Cys Val Tyr Cys Pro Gly Gly Pro Asp
            100                 105                 110
Ser Asp Phe Glu Tyr Ser Thr Gln Ser Tyr Thr Gly Tyr Glu Pro Thr
    115                 120                 125
Ser Met Arg Ala Ile Arg Ala Arg Tyr Asp Pro Phe Leu Gln Thr Arg
    130                 135                 140
His Arg Ile Glu Gln Leu Lys Gln Leu Gly His Ser Val Asp Lys Val
145                 150                 155                 160
Glu Phe Ile Glu Met Gly Gly Thr Phe Met Ala Leu Pro Glu Glu Tyr
                165                 170                 175
Arg Asp Tyr Phe Ile Arg Asn Leu His Asp Ala Leu Ser Gly His Thr
        180                 185                 190
Ser Asn Asn Ile Tyr Glu
        195             198


<210> 1470
<211> 178
<212>Amino acid
<213> Homo sapiens


<400> 1470
Trp Glu Ser Asp Val Gly Glu Gly Leu Arg Pro Pro Pro Pro Pro Pro
1               5                   10                  15
Pro Pro Gly Arg Arg Arg Thr Gln Glu Pro Arg Ala Arg Asp Ala Ala
            20                  25                  30
Thr Val Ile Phe Ala Cys Pro Ala Ala Leu Leu Glu Thr Leu Ile Ala
        35                  40                  45
Tyr Gly Ser Ser Ser Pro Ser Phe Cys Lys His Arg Ala Ala Arg Pro
    50                  55                  60
Leu Ile Phe Leu Leu His Arg Leu Thr Ala Glu Ala Thr Ala Arg Cys
65                  70                  75                  80
Pro Ile Cys Ala Leu Glu Ala Arg Asn Pro Gly Arg Trp Gly Ile Cys
            85                  90                  95
Ala Ser Trp Pro Gly Met Lys Thr Pro Phe Gly Lys Ala Ala Ala Gly
            100                 105                 110
Gln Arg Ser Arg Thr Gly Ala Gly His Gly Ser Val Ser Val Thr Met
    115                 120                 125
Ile Lys Arg Lys Ala Ala His Lys Lys His Arg Ser Arg Pro Thr Ser
    130                 135                 140
Gln Pro Arg Gly Asn Ile Val Gly Cys Ile Ile Gln His Gly Trp Lys
145                 150                 155                 160
Asp Gly Asp Glu Pro Leu Thr Gln Trp Lys Gly Thr Val Leu Asp Gln
```

                         165   170   175
Leu Leu
    178

        <210> 1471
        <211> 253
        <212>Amino acid
        <213> Homo sapiens

        <400> 1471
Arg Asp Leu Gly Val Ala Leu Glu Ala Phe Gln Trp Ala Arg Ala Gly
 1   5   10   15
Asp Cys Gly Ser Gly Ala Gly Arg Ala Gly Gly Glu Gly Val Asp Ala
            20   25   30
Gly Arg Arg Val Pro Glu Arg Gln His Arg Gly Arg Gly Gly Gly Gly
        35   40   45
Glu Pro Gly Arg Arg Gln Arg Gly Gly Arg Arg Gln Arg Ser Ser Ser
    50   55   60
Arg Arg Ser Gly Gly Asp Gly Gly Asp Glu Val Glu Gly Ser Gly Val
65   70   75   80
Gly Ala Gly Glu Gly Glu Thr Val Gln His Phe Pro Leu Ala Arg Pro
                85   90   95
Lys Ser Leu Met Gln Lys Leu Gln Cys Ser Phe Gln Thr Ser Trp Leu
            100   105   110
Lys Asp Phe Pro Trp Leu Arg Tyr Ser Lys Asp Thr Gly Leu Met Ser
            115   120   125
Cys Gly Trp Cys Gln Lys Thr Pro Ala Asp Gly Gly Ser Val Asp Leu
    130   135   140
Pro Pro Val Gly His Asp Glu Leu Ser Arg Gly Thr Arg Asn Tyr Lys
145   150   155   160
Lys Thr Leu Leu Leu Arg His His Val Ser Thr Glu His Lys Leu His
                165   170   175
Glu Ala Asn Ala Gln Glu Ser Glu Ile Pro Ser Glu Glu Gly Tyr Cys
                180   185   190
Asp Phe Asn Ser Arg Pro Asn Glu Asn Ser Tyr Cys Tyr Gln Leu Leu
            195   200   205
Arg Gln Leu Asn Glu Gln Arg Lys Lys Gly Ile Leu Cys Asp Val Ser
    210   215   220
Ile Val Val Ser Gly Lys Ile Phe Lys Ala His Lys Asn Ile Leu Val
225   230   235   240
Ala Gly Ser Arg Phe Phe Lys Thr Leu Tyr Cys Phe Ser
            245   250   253

        <210> 1472
        <211> 147
        <212>Amino acid
        <213> Homo sapiens

        <400> 1472
Ser Leu Arg Ala Ala Ala Ala Met Ala Asp Val Thr Ala Arg Ser Leu
 1   5   10   15
Gln Tyr Glu Tyr Lys Ala Asn Ser Asn Leu Val Leu Gln Ala Asp Arg
            20   25   30
Ser Leu Ile Asp Arg Thr Arg Arg Asp Glu Pro Thr Gly Glu Val Leu

                            913

```
              35                    40                    45
Ser Leu Val Gly Lys Leu Glu Gly Thr Arg Met Gly Asp Lys Ala Gln
         50                    55                    60
Arg Thr Lys Pro Gln Met Gln Glu Glu Arg Arg Ala Lys Arg Arg Lys
65                    70                    75                    80
Arg Asp Glu Asp Arg His Asp Ile Asn Lys Met Lys Gly Tyr Thr Leu
                   85                    90                    95
Leu Ser Glu Gly Ile Asp Glu Met Val Gly Ile Ile Tyr Lys Pro Lys
              100                   105                   110
Thr Lys Glu Thr Arg Glu Thr Tyr Glu Val Leu Leu Ser Phe Ile Gln
              115                   120                   125
Ala Ala Leu Gly Asp Gln Pro Arg Asp Ile Leu Cys Gly Ala Ala Asp
         130                   135                   140
Glu Val Leu
145       147
```

```
       <210> 1473
       <211> 139
       <212>Amino acid
       <213> Homo sapiens
```

```
       <400> 1473
Cys Asn Ser Ala Glu Ser Arg Met Asp Val Leu Phe Val Ala Ile Phe
1                    5                    10                   15
Ala Val Pro Leu Ile Leu Gly Gln Glu Tyr Glu Asp Glu Glu Arg Leu
              20                    25                    30
Gly Glu Asp Glu Tyr Tyr Gln Val Val Tyr Tyr Tyr Thr Val Thr Pro
         35                    40                    45
Ser Tyr Asp Asp Phe Ser Ala Asp Phe Thr Ile Asp Tyr Ser Ile Phe
         50                    55                    60
Glu Ser Glu Asp Arg Leu Asn Arg Leu Asp Lys Asp Ile Thr Glu Ala
65                    70                    75                    80
Ile Glu Thr Thr Ile Ser Leu Glu Thr Ala Arg Ala Asp His Pro Lys
                   85                    90                    95
Pro Val Thr Val Lys Pro Val Thr Thr Glu Pro Gln Ser Pro Asp Leu
              100                   105                   110
Asn Asp Ala Val Ser Ser Leu Arg Ser Pro Ile Pro Leu Leu Leu Ser
         115                   120                   125
Cys Ala Phe Val Gln Val Gly Met Tyr Phe Met
         130                   135       139
```

```
       <210> 1474
       <211> 185
       <212>Amino acid
       <213> Homo sapiens
```

```
       <220>
       <221> misc_feature
       <222> (1)...(185)
       <223> X = any amino acid or stop code
```

```
       <400> 1474
Phe Val Arg Gly Pro Gly Glu Glu Gln Ala Pro Ala Phe Arg Lys Pro
 1             5                    10                   15
```

914

```
Ala Pro Gly Ala Met Gly Ala Gln Val Arg Leu Pro Pro Gly Glu Pro
        20              25                      30
Cys Arg Glu Gly Tyr Val Leu Ser Leu Val Cys Pro Asn Ser Ser Gln
        35              40                      45
Ala Trp Cys Glu Ile Thr Asn Val Ser Gln Leu Leu Ala Ser Pro Val
    50              55                      60
Leu Tyr Thr Asp Leu Asn Tyr Ser Ile Asn Asn Leu Ser Ile Ser Ala
65              70                      75                      80
Asn Val Glu Asn Lys Tyr Ser Leu Tyr Val Gly Leu Val Leu Ala Val
            85              90                      95
Ser Ser Ser Ile Phe Ile Gly Ser Ser Phe Ile Leu Lys Lys Lys Gly
            100             105                     110
Leu Leu Gln Leu Ala Ser Lys Gly Phe Thr Arg Ala Gly Gln Gly Gly
        115             120                     125
His Ser Tyr Leu Lys Glu Trp Leu Trp Trp Val Gly Leu Leu Ser Ile
    130             135                     140
Leu Ser Trp Asn Ala Arg Glu Lys Val Asp Leu Xaa Asn Ile Thr Phe
145             150                     155                     160
Xaa Pro Gln Thr Ser Cys Ile Phe Phe Thr Ile Thr Ile Glu Lys Ser
            165                     170                     175
Thr Phe Leu Ser Tyr Phe Pro Thr Ser
            180             185
```

```
<210> 1475
<211> 91
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1475
Ala Arg Gly Ser Cys Pro Thr Arg Pro Arg Pro Ala Asn Gly Arg Met
1               5               10                      15
Ala Glu Thr Lys Asp Ala Ala Gln Met Leu Val Thr Phe Lys Asp Val
            20              25                      30
Ala Val Thr Phe Thr Arg Glu Glu Trp Arg Gln Leu Asp Leu Ala Gln
        35              40                      45
Arg Thr Leu Tyr Arg Glu Val Met Leu Glu Thr Cys Gly Leu Leu Val
    50              55                      60
Ser Leu Gly His Arg Val Pro Lys Pro Glu Leu Val His Leu Leu Lys
65              70                      75                      80
His Gly Gln Glu Leu Trp Ile Val Lys Arg Gly
            85                      90  91
```

```
<210> 1476
<211> 159
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1476
Tyr Thr Met Leu Arg Gly Thr Met Thr Ala Trp Arg Gly Met Arg Pro
1               5               10                      15
Glu Val Thr Leu Ala Cys Leu Leu Leu Ala Thr Ala Gly Cys Phe Ala
            20              25                      30
Asp Leu Asn Glu Val Pro Gln Val Thr Val Gln Pro Ala Ser Thr Val
            35              40                      45
```

915

```
Gln Lys Pro Gly Gly Thr Val Ile Leu Gly Cys Val Val Glu Pro Pro
    50              55                  60
Arg Met Asn Val Thr Trp Arg Leu Asn Gly Lys Glu Leu Asn Gly Ser
65              70                  75                  80
Asp Asp Ala Leu Gly Val Leu Ile Thr His Gly Thr Leu Val Ile Thr
                85                  90                  95
Ala Leu Asn Asn His Thr Val Gly Arg Tyr Gln Cys Val Ala Arg Met
            100                 105                 110
Pro Ala Gly Ala Val Ala Ser Val Pro Ala Thr Val Thr Leu Ala Ser
            115                 120                 125
Glu Ser Ala Pro Leu Pro Pro Cys His Gly Ala Val Pro Pro His Leu
130                 135                 140
Ser His Pro Glu Ala Pro Thr Ile His Ala Ala Ser Cys Tyr Ser
145                 150                 155         159
```


```
<210> 1477
<211> 139
<212> Amino acid
<213> Homo sapiens
```


```
<400> 1477
Trp Gly Arg Arg Arg Gln Leu Val Ser Glu Ala Ala Arg Ala Gln Gly
1               5                   10                  15
Asp Pro Val Cys Ser Thr Met Ser Glu Glu Glu Ala Ala Gln Ile Pro
            20                  25                  30
Arg Ser Ser Val Trp Glu Gln Asp Gln Gln Asn Val Val Gln Arg Val
        35                  40                  45
Val Ala Leu Pro Leu Val Arg Ala Thr Cys Thr Ala Val Cys Asp Val
    50                  55                  60
Tyr Ser Ala Ala Lys Asp Arg His Pro Leu Leu Gly Ser Ala Cys Arg
65                  70                  75                  80
Leu Ala Glu Asn Cys Val Cys Gly Leu Thr Thr Arg Ala Leu Asp His
                85                  90                  95
Ala Gln Pro Leu Leu Glu His Leu Gln Pro Gln Leu Ala Thr Met Asn
            100                 105                 110
Ser Leu Ala Cys Arg Gly Leu Asp Lys Leu Glu Glu Lys Leu Pro Phe
        115                 120                 125
Leu Gln Gln Pro Ser Glu Thr Val Val Thr Ser
130                 135             139
```


```
<210> 1478
<211> 331
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(331)
<223> X = any amino acid or stop code
```


```
<400> 1478
Ala Lys Ala Phe Thr Met Ala Glu Ser Pro Gly Cys Cys Ser Val Trp
1               5                   10                  15
Ala Arg Cys Leu His Cys Leu Tyr Ser Cys His Trp Arg Lys Cys Pro
```

```
              20                    25                    30
Arg Glu Arg Met Gln Thr Ser Lys Cys Asp Cys Ile Trp Phe Gly Leu
        35                    40                    45
Leu Phe Leu Thr Phe Leu Leu Ser Leu Ser Trp Leu Tyr Ile Gly Leu
       50                    55                    60
Val Leu Leu Asn Asp Leu His Asn Phe Asn Glu Phe Leu Phe Arg Arg
 65                    70                    75                    80
Trp Gly His Trp Met Asp Trp Ser Leu Ala Phe Leu Leu Val Ile Ser
              85                    90                    95
Leu Leu Gly Thr Tyr Ala Ser Leu Leu Leu Val Leu Ala Leu Leu Leu
           100                   105                   110
Arg Leu Cys Arg Gln Pro Leu His Leu His Ser Leu His Lys Val Leu
       115                   120                   125
Leu Leu Leu Ile Met Leu Leu Val Ala Ala Gly Leu Val Gly Leu Asp
       130                   135                   140
Ile Gln Trp Gln Gln Glu Arg His Ser Leu Arg Val Ser Leu Gln Asp
145                   150                   155                   160
Cys Arg Xaa Leu Xaa Thr Pro Ala Val Arg Pro Xaa Glu Glu Ser Gly
              165                   170                   175
Glu Gly His Trp Arg Arg Ala His Leu Thr Ser Ser Cys Pro Gln Ala
           180                   185                   190
Thr Ala Pro Phe Leu His Ile Gly Ala Ala Ala Gly Ile Ala Leu Leu
       195                   200                   205
Ala Trp Pro Val Ala Asp Thr Phe Tyr Arg Ile His Arg Arg Glu Pro
   210                   215                   220
Lys Ile Leu Leu Leu Leu Leu Phe Phe Gly Val Val Leu Val Ile Tyr
225                   230                   235                   240
Leu Ala Pro Leu Cys Ile Ser Ser Pro Cys Ile Met Glu Pro Arg Asp
              245                   250                   255
Leu Pro Pro Lys Pro Gly Leu Val Gly His Arg Gly Ala Pro Met Leu
              260                   265                   270
Ala Pro Glu Asn Thr Leu Met Ser Leu Arg Lys Thr Ala Glu Cys Gly
           275                   280                   285
Ala Thr Val Phe Glu Thr Asp Val Met Val Ser Ser Asp Gly Val Pro
       290                   295                   300
Phe Leu Met His Asp Glu His Leu Ser Arg Thr Thr Asn Val Ala Ser
305                   310                   315                   320
Val Phe Pro Thr Arg Ile Thr Ala His Ser Ser
           325                   330 331
```

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2 May 2002

For two-letter codes and other abbreviations. refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: NOVEL NUCLEIC ACIDS AND POLYPEPTIDES

(57) Abstract: The present invention provides novel nucleic acids. novel polypeptide sequences encoded by these nucleic acids and uses thereof.

INTERNATIONAL SEARCH REPORT

	International application No.
	PCT/US00/35017

A. CLASSIFICATION OF SUBJECT MATTER
IPC(7)   : C12Q 1/68; C07H 21/02
US CL   : 435/6; 536/23.1
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
    U.S. : 435/6; 536/23.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	Database EST, National Human Genome Institute (Bethesda, MD, USA), Accession Number AW068570, JIA et al., 'SGAP: The Skeletal Genome Anatomy Project,' 13 October 1999.	2-3 and 10
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Y		6-9, 11 and 19
Y	WATSON et al. The Science Used in the Recombinant DNA Industry. Recombinant DNA; A Short Course. New York. W.H. Freeman and Company. 1983, pages 231-241, Chapter 18, see entire document.	6-9, 11 and 19

☐ Further documents are listed in the continuation of Box C.   ☐ See patent family annex.

*	Special categories of cited documents:
"A"	document defining the general state of the art which is not considered to be of particular relevance
"E"	earlier application or patent published on or after the international filing date
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O"	document referring to an oral disclosure, use, exhibition or other means
"P"	document published prior to the international filing date but later than the priority date claimed

"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&"	document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
31 July 2001 (31.07.2001)	**31 AUG 2001**

Name and mailing address of the ISA/US	Authorized officer
Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703)305-3230	Young J. Kim TERRY J. DEY PARALEGAL SPECIALIST TECHNOLOGY CENTER 1600 Telephone No. (703) 308-

Form PCT/ISA/210 (second sheet) (July 1998)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US00/35017

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claim Nos.:
   because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claim Nos.:
   because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claim Nos.:
   because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
Please See Continuation Sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-11, 19, and SEQ ID Number 1 (Claim 20 was in Group I but is not drawn to the elected sequence.)

Remark on Protest ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

Form PCT/ISA/210 (continuation of first sheet(1)) (July 1998)

BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claim(s) 1-11, 19, and 20, drawn to a polynucleotide, a vector comprising the polynucleotide, a host cell comprising the vector, a polypeptide, a method of producing the polypeptide, and a composition comprising the polypeptide of Group I and a carrier.

Group II, claim(s) 12, drawn to an antibody specific for the polypeptide of Group I.

Group III, claim(s) 13-15, drawn to a method of detecting the polynucleotide of Group I.

Group IV, claim(s) 16, drawn to a method of detecting the polypeptide of Group I.

Group V, claim(s) 17 and 18, drawn to a method of finding a binding partner of the polypeptide of Group I.

Group VI, claim(s) 21, drawn to a polypeptide array.

Group VII, claim(s) 22-26, drawn to an array of polynucleotides comprising the polynucleotide of Group I.

Group VIII, claim(s) 27, drawn to a method of therapeutic treatment using the polypeptide of Group I.

Group IX, claim(s) 28, drawn to a method of therapeutic treatment using an antibody.

The inventions listed as Groups I-IX do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The polynucleotide of claim Group I lack a special technical feature because each polynucleotide is directed to a unique sequence which may give rise to a polypeptide with unique function. In addition, each additional group set forth has its own unifying feature which is distinct from that of the other. Finally, PCT Rule 13.1 and Annex B do not provide for unity of invention between two or more different products or methods of use that share a special technical feature.

In addition, each Group detailed above reads on distinct Groups drawn to multiple sequences. The sequences are distinct because they are unrelated sequences, and a further lack of unity is applied to each Group. The Applicants must further elect one sequence for examination in the elected Group detailed above. Payment of fees for an additional invention will entitle the Applicants to examination of one additional sequence.

The total number of invention was calculated based on the number of combination that exist between the SEQ ID Numbers and the total number of groups. The formula is recited below:

Total Number of Inventions found = (Total Groups X Total SEQ ID Numbers) - Total Groups
Total Number for this Application = (9 X 739) - 9 = 6642

International application No.

PCT/US00/35017

Continuation of B. FIELDS SEARCHED Item 3:
Database EST, GenEmbl, GenBank;
Search terms: SEQ ID Number 1